THE TENDENCY TOWARDS INDUSTRIAL COMBINATION

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The Tendency Towards Industrial Combination

A STUDY OF THE MODERN MOVEMENT TOWARDS INDUSTRIAL COMBINATION IN SOME SPHERES OF BRITISH INDUSTRY; ITS FORMS AND DEVELOPMENTS, THEIR CAUSES, AND THEIR DETERMINANT CIRCUMSTANCES

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FOREWORD

THE present analysis of the problem presented by the Modern Tendency towards Industrial Combination has been prepared for publication by an apprentice author only with considerable diffidence. For its career so far has been somewhat chequered. The original intention was to prepare a more detailed analysis of the history of industrial combination particularly in the coal industry right from the time of the Hostmen's Vends of Newcastle in the sixteenth century. However, the publication of Dr. H. Levy's volume—*Monopole, Kartelle u. Trusts*, containing a wealth of sifted material relating to the Newcastle Coal Vends, largely anticipated me as to the above intention, and also as to some of the conclusions relating to the probable development and influence of the combination movement in Great Britain.

The suggestion then presented itself that the materials already assembled might be utilized for a general analysis of the combination tendency in various spheres of British industry, so as to indicate the lines of development and forms of organization discernible within the general tendency, and also to lay bare underlying causes and determinant circumstances and to estimate probable developments.

The wealth of material already available, particularly from the writings of Messrs. H. W. Macrosty and J. A. Hobson, seemed to necessitate that further study should be analytic rather than descriptive. The volume of Professor D. H. Macgregor, *Industrial Combination*, provided an excellent model for a further general analysis of the combination movement in various British industries, particularly when taken in conjunction with the other writings indicated above.

I must needs express most unreservedly and gratefully my indebtedness to the writings of the above gentlemen for very many valuable suggestions.

The procedure followed in the present volume naturally involved that any conclusions should be exemplified and verified by actual references to the practical spheres of industry and commerce. In this respect I am much indebted to Mr. Frederick Mills, the Managing Director of the Ebbw Vale Steel, Iron & Coal Co., Ltd., for the opportunity of obtaining an insight into the technique of a modern "vertically organized enterprise," and also to many of those connected with other prominent industrial undertakings.

The "combination problem" is difficult and diverse, and does not always admit of precise methods of determination or wide, unqualified conclusions. It seems clear, however, that the present need is for discrimination between the different parts of the problem, and the varied developments exhibited in different industries, for "intensive" and particular analyses dealing in specialized fashion with the combinations in various industries. In the present study considerable attention is given, in particular, to the coal industry, the iron and steel industries generally, and the manufacture of tinplate. My connection with the University of Wales explains the frequent references to industries of South Wales.

It is a very pleasant portion of my duty to acknowledge very gratefully the great assistance I have received from many in the course of my inquiries; in particular to Mr. H. W. Macrosty, of the Census of Production Offices, for much advice and assistance in preparing my MS. for the Press; to Professors W. Jenkyn Jones and E. A. Lewis of the University of Wales for constant advice and encouragement; to Mr. D. A. Thomas, Chairman of the Cambrian Coal Trust, Ltd., for much information relating to that well-known enterprise and the coal industry generally,

and to Dr. Lilian Knowles and Mr. Sidney Webb of the London School of Economics for directing many of my earlier inquiries. The Appendix is an article reprinted through the kindness of the Editor of the *Economic Journal*.

In passing the volume through the Press I have received the greatest assistance from Mr. Headicar, Librarian of the London School of Economics, the authorities of the School generally, and my friends, Messrs. J. L. Rogers and W. M. Taylor. But for the varied assistance I have received from these and other sources it is probable that publication might have been delayed indefinitely. It is now submitted in the hope that it may add a small contribution towards making more complete the study of the Modern Tendency towards Industrial Combination.

G. R. CARTER.

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September 1913.

LIST OF PUBLICATIONS HAVING REFERENCE TO THE STUDY OF THE MODERN TENDENCY TOWARDS INDUSTRIAL COMBINATION IN BRITISH INDUSTRY

THESE fall into several classes—

1. Those dealing with the tendency towards industrial combination generally in the various countries in which its development is exhibited. They are necessary in order to obtain a broad, general estimate of the nature and extent of the tendency towards industrial combination; also to estimate by means of contrast and comparison, across national borders, the " national " aspects of the combination tendency in England.

2. Those (and it is significant that they are comparatively few) which refer directly to the development of the combination tendency in British industry.

3. Those which refer to the history, development, and general working of the various British industries (the " great " industries) which are considered. A thorough acquaintance with these is an essential preliminary to any satisfactory study or understanding of the tendency towards industrial combination in England in its " national " aspects. It also facilitates contrast and comparison between the fortunes of combination in various industries by extending the study over the " borders " of industries or trades.

4. Those dealing with " Economic Theory," which explain the theoretical and economic principles underlying the developments discernible within the combination tendency as forms of industrial and economic organization.

5. Collections of statistics to furnish concrete evidence of any conclusions.

Personal inquiries as regards various industrial and commercial enterprises or combination projects, and with those cognizant of the real facts, are indispensable for an accurate estimate of the problem.

The publications falling within these various classes are—

(*a*) GENERAL BOOKS.

The Trust Problem. (J. W. Jenks.)
Monopolies and Trusts. (R. E. Ely.)

The Control of Trusts. (J. B. Clark.)
Trusts. (E. von Halle.)
Monopolies, Trusts, and Kartells. (F. W. Hirst.)
Trusts, Pools, and Corporations. (W. Z. Ripley.)
Trusts, Pools, and Corners. (J. S. Jeans.)
Trusts, kartels et syndicats. (P. Raffalovich.)
Trusts and the Tariff. (Bolen.)
Monopole, Kartelle, und Trusts. (H. Levy.)
Trusts and the State. (H. W. Macrosty.) 1901.
The Corporation Problem. (W. W. Cook.) 1891.
Les Syndicats industriels. (C. Genart.) 1896.
Trusts. (W. W. Cook.) 1888.
Trusts of To-day, their Promotion, Management, etc. (G. W. Montague.)
Problems of To-day. (R. E. Ely.)
Essai sur les ententes commerciales et industrielles. (C. Brouillet.) 1895.
A Study of the Origin and Development of Great Business Combinations. (J. P. Davis.) 1905.
Über Kartelle. (Dr. Grunzel.) 1902.
Die Unternehmerverbände. (Dr. Liefmann.)
Monopolistic Combinations in the German Coal Industry. (F. Walker.)
Political Economy. (Conrad.)
Bossism and Monopoly. (Spelling.)
The Right of the State to control the Monopoly of Necessary Articles. (G. A. Boyle.)
Les Syndicats industriels de producteurs en France et à l'étranger. (Paul de Roussiers.)
Les Syndicats industriels en Belgique. (G. de Leener.) 1904.
Le Rôle des trusts dans l'organisation économique actuelle; (Transactions of the Académie impériale et royale des sciences, etc.)
The Problem of Monopoly. (J. B. Clark.)
Pools and Corporations—Their Side of the Case. (Royalle.) 1897.
Trusts and Monopoly—Exposition of the rule of public policy against contracts and combinations in restraint of Trade. (T. C. Spelling.) 1893.
The Truth about the Trusts. (J. Moody.) 1904.
Commercial Trusts—The Growth and Rights of Aggregated Capital. (T. R. Don Passos.) 1901.
The Trust Movement in British Industry. (H. W. Macrosty.) 1907.
The Evolution of Industry. (Henry Dyer.)
The Industrial System. (J. A. Hobson.)

The Evolution of Modern Capitalism. (J. A. Hobson.)
Fabian Essays.
The American Commonwealth. (J. Bryce.)
The Principles of Economics. (A. Marshall.)
The New Trades Combination Movement. (E. J. Smith.) 1899.
The Encyclopædia of Social Reform.
Dictionary of Political Economy. (Palgrave.)
Industrial Efficiency. (Dr. Shadwell.)
Economics. (Hadley.)
Monopolies and the People. (C. W. Baker.) 1890.
Les Industries monopolisées aux États Unis. (P. de Roussiers.) 1898.
Combination in Lake Superior Iron Ore Production. (H. R. Mussey.) 1905.
Growth of English Industry and Commerce. (Dr. Cunningham.)
British Industries. (W. J. Ashley.)
British Industries under Free Trade. (Harold Cox.)
The Tariff Problem. (W. J. Ashley.)
The Lancashire Cotton Industry. (S. J. Chapman.)
The Cotton Trade and Industry. (S. J. Chapman.)
The Woollen and Worsted Industries. (J. H. Clapham.)
The Woollen Industry of England under Protection and Free Trade. (D. M. Hunter.)
Progress of the Nation. (G. R. Porter.) 1851.
The History of the Iron Trade. (Scrivenor.)
A Historical View of the Coal Trade. (M. Dunn.) 1844.
History of the Coal Trade of Northumberland, etc. (Archer.)
The South Wales Coal Trade. (Charles Wilkins.) 1888.
A Scheme for the Regulation of the Coal Industry by means of International Agreement, etc. (E. Lewy.) 1896.
Some Notes on the Coal Trade of the United Kingdom, with special Reference to South Wales and Monmouthshire. A Scheme for Preventing Undue Competition and Maintaining Prices. (D. A. Thomas.) 1896.
Imports and Exports. (S. Jevons.)
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The Iron Trade of Great Britain. (J. S. Jeans.) 1906.
Pioneers of the Cleveland Iron Trade. (J. S. Jeans.) 1875.
History of the Trade in Tin. (P. W. Flowers.)
The Manufacture of Tin Plate. ("Wales.") 1894, 1895.
Principles of Political Economy. (J. S. Mill.)
Surveys, Historic and Economic. (W. J. Ashley.)

The Industrial and Commercial History of England. (T. H. Rogers.)
Hints to Coal Buyers. (Charles E. Evans.) 1909.
The Company of Hostmen of Newcastle. (Dendy.) (Publications of the Surtees Society.)
Die deutschen Roheisensyndicate. (August Hillringhaus.)
Wealth and Welfare. (A. Pigou.)
Foreign Trade in Coal. (H. S. Jevons.)

(*b*) Official Publications.

Statistical Abstracts of Imports and Exports of the United Kingdom.
Memorandum to the House of Commons *re* Fiscal Policy (1906). (Marshall.)
Reports of the Royal Commissions on Mines.
Report of the U.S. Industrial Commission.
Diplomatic and Consular Reports for Germany.
Bericht über Kartellwesen (1905).
Kontradiktorische Verhandlungen über deutsche Kartelle.
List of Mines in the United Kingdom of Great Britain and Ireland. 1912.

(*c*) Semi-Official Publications.

Report of the Tariff Commission on English Industries.
Report of the British Iron Trade Commission to U.S.A.
The Coal and Iron Trade Diaries.
The South Wales Coal Trade Annual.
South Wales Coal and Iron Companies—Annual Lists.
Die Bergwerke u. Salinen im niederrhenisch-westfälischen Bergbaubezirk.
Prospectuses, and Reports of Various Amalgamations, *e. g.*—

The Wallpaper Manufacturers, Ltd.; the Bradford Dyers' Association, Ltd.; the Associated Portland Cement Manufacturers, Ltd.; the Calico Printers' Association, Ltd., etc.

Transactions of the Royal National Eisteddfod of Wales.
The Colliery Guardian Review of the Coal Trade.
Statistics *re* Worsted, Woollen (and Textiles) Trades of the United Kingdom :—Bradford Chamber of Commerce.
The Works of Palmers' Shipbuilding and Iron Co., Ltd. 1912.
Encyclopædia Britannica.
Rylands' Trades Directories.

(*d*) JOURNALS, PERIODICALS.

The Economic Journal.
The Contemporary Review.
The Iron and Coal Trades Review.
The Daily Mail Year Book.
The Daily News Year Book.
The Economist.
Trade Supplements to the Yorkshire Post, and the Sheffield Daily Telegraph.
The Shipping Gazette and Lloyd's News.
The Financial and Commercial Supplements of the Times.
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The Trusts under Free Trade.
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Miners and the Eight Hours Movement. (C. M. Percy.)
Cotton Land, Too many Mills! (Pearkes Withers.)

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The Modern Tendency towards Industrial Combination in some Spheres of British Industry

Its Forms and Developments, their Causes and their Determinant Circumstances

Chapter I

INTRODUCTORY

Rapid as are the changes which the last few years have seen in the conditions of foreign trade and in other branches of the economic life of a country, those taking place in the relations of different groups of industry within a country are more rapid still, and more fundamental.[1] In dealing with the changing relations between the various groups of industry within England, it seems that Dr. Marshall regarded the problem as an aspect of the operation of competition within a nation, wherein the past counts for comparatively little, and the present and future have to work for themselves without very much direct aid from experience. Still, there seems no conflict with the general view that the development of the modern tendency towards the combination of industrial and commercial enterprises in England, as in other countries, with the various peculiarities of origin, structure, and functions, can be explained to a considerable extent, at any rate, by an investigation of the economic history and conditions of the various countries and of the particular industries concerned.

[1] *Some Aspects of Competition* (Marshall), p. 13.

Although the experience of the past cannot yield very much direct aid to the present inquiry, any investigation of the extent and progress of the modern tendency towards industrial combination in Great Britain must take some account of the economic and industrial conditions immediately preceding. For the whole of history and all industrial progress reveal a story of continuous development, hastened or retarded in different countries or different industries, and at different periods, by special circumstances preceding or contemporary. This is particularly the case with industrial organization and development in modern times. An investigation of the causes and the determinant circumstances of the modern tendency towards industrial combination in industry shows clearly that some of these have been at work, beneath the surface, for many years.

While the developments of industrial combination are already of considerable importance in British industry and continue to increase, they still constitute a part of the main body of economic and industrial development, whose progress depends upon fundamental and continuously operating forces. Throughout there is no break or hollow, these are constantly filled up by the onward flow of the main stream. All economic and industrial developments represent a part of the onward course of modern progress and improvement.

A survey of the development of English industry and commerce reveals many forms of organization, which have held supremacy successively, according as they seemed to answer the needs and conditions of the periods to which they belonged. In turn, they have all given place to stronger and more vigorous successors, which seemed more applicable and better adapted to new industrial and commercial conditions. The whole history of commercial and industrial development in England is one of constant growth and decline, of change—not always in any one direction—according as

the types of organization were in turn determined or affected by contemporary conditions.[1]

These circumstances must be kept in view in any inquiry concerning the combination tendency, for as Professor Jenks has pointed out, it is impossible to understand why there has of late been so strong a tendency towards the formation of industrial combinations, unless one first sees clearly the economic conditions out of which they have arisen.[2]

The development of the modern tendency towards the formation of industrial combinations is of comparatively recent date in English industry. Here its appearance was later and its progress slower than is the case with the corresponding developments in U.S.A., and on the Continent, especially in Germany and Austria. In England, the modern movement appears to have become fairly vigorous by the beginning of the eighties, and to have reached its high-water mark about 1900–2. The date of this period suggests an interesting comparison between it and that of the closing years of the eighteenth century and the beginning of the nineteenth.

This latter period saw the adoption and development of the new methods of industrial organization, with such rapidity and of such fundamental importance that it is termed the era of industrial revolution. The new methods of industrial organization were concerned primarily with new instruments of production, but these new productive methods were full of latent possibilities as regards industrial organization and administration generally. The period marked the beginning of the sway and unconditional acceptance of competitive principles in industry and commerce. The operation, too, of these principles through the competitive system

[1] Cp. *The Growth of English Industry and Commerce* (Cunningham). Vol. i, Introductory, iii.

[2] *The Trust Problem* (Jenks), p. 10.

was full of the utmost possibilities as regards the future organization of industry and commerce. Their influence was ultimately to necessitate a controlling system in some form of industrial combination.

On the other hand, the former period—the end of the nineteenth century and the beginning of the twentieth—has witnessed the full and conscious development of a method of industrial organization, which aims at the regulation of the competitive system and the elimination of its evil consequences. It is a method of organization which deals particularly with the administrative and distributive branches of industrial and commercial development. The old principles of the competitive system no longer claim or command unconditional acceptance on the part of business leaders.

What then of the period of transition from the strongly individualistic tendencies of the earlier period, to the "combination tendencies" of the later period? [1] According to the principles already indicated, the period of transition should furnish not only a means of connection but also of explanation, in part, at any rate.

In Adam Smith's time, and even much earlier, English industrial and commercial history furnished instances of combinations of producers aiming at the regulation of prices and supply by means of mutual agreement, and not by rival competition. Some of these were of a most informal character, others exhibit a considerable degree of systematic organization. Chief among the latter is the famous "Limitation of the Vend" (the Vend of Newcastle), formed in 1776, and dissolved on May 13, 1844.[2] Strangely enough, this combination, which was in some ways the successor of combinations formed at intervals from as early as 1592, regulated the coal trade of the northern coalfield during the years which marked the adoption of "the free and

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[1] Cp. *Monopole, Kartelle und Trusts* (Levy), pp. 160–9.

[2] *Some Notes on the Coal Trade* (D. A. Thomas), p. 26, Appendix V. *The Company of Hostmen of Newcastle-upon-Tyne* (Surtees Society), etc.

natural system of liberty," and continued for many years after the triumph of the competitive system throughout industry in general.

As will be seen later, there are isolated instances of some informal and local agreements to restrict and regulate competition in various trades during the period just before 1880. However, there will appear sufficient reason for isolating them from the more modern tendency towards industrial combination in England.

In a general survey of industry in England during the nineteenth century, up till about 1870–80, it appears that competition and competitive principles maintained a sway that was practically undisputed. Both in the practical spheres of industry and commerce, and also in the theoretical spheres of study and writing, the old tenets of the followers of Adam Smith seem to have been accepted with little challenge. The competitive system had done so much to advance the industrial position of England, and its principles had come to be so firmly established, that they seemed to defy any attempts to undermine their influence.[1] The dominant system under which industry should be carried on was that of competition. The possibilities of restricting competition by means of combination seem to have been under-estimated generally.

The position of the combination tendency in England may be seen more clearly by means of a comparison with the United States or with Germany in this connection. Various authorities agree that the modern tendency towards industrial combination was in full swing in U.S.A., and also in Germany, during the years 1888–90. Consequently, the origin of the movement (to an appreciable degree) in these countries must be placed at an early period as compared with England. Thus it has been said that in Germany, during the years 1888–91, as also in U.S.A., the movement towards the formation of combinations reached its height; also that in Germany there were combinations of the modern kind early in

[1] Cp. *Monopole, Kartelle und Trusts* (Levy), Part iii.

the sixties; one of the chief of existing Cartels—the Potash Cartel—was established about 1863.[1] In U.S.A. one of the strongest amalgamations, the Standard Oil Co., was formed in 1882, while previous to this date systematic attempts had been made to regulate competition by means of temporary agreements.[2] In this connection some interesting evidence is available from an address given by Professor W. J. Ashley, before the British Economic Association, March 22, 1899. It was stated that a dozen years ago the American public suddenly awoke to the fact that the supply of some of the commodities of commonest use had come to be controlled by a number of organizations, which seemed to be able to fix prices without regard to competition. The discovery led to a great outcry—a popular demand arose for legislation, and anti-trust laws were passed by the States Legislatures, and in 1890 by the United States Congress itself, with regard to inter-state commerce.[3]

Similarly, attempts were made by the late Mr. Pierpont Morgan to control certain coal measures and means of railway transportation—"a tendency which began to show itself as long ago as 1872;" and it was pointed out that almost every one of the larger American combinations often referred to has behind it a significant history of fifteen, twenty, or even thirty years' duration.[3]

Discussion of the monopoly question in the United States seems to have begun early in the seventies, while in his biographical summary of literature dealing with the Trust problem, Professor C. J. Bullock shows that by 1890 the combination movement had reached such dimensions as to call forth a vast quantity of literature dealing with the subject. By 1901 the mass of treatises, articles, reports of investigation, books, etc., published was enormous.[4]

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[1] *U.S. Industrial Commission Reports*, Vol. xviii, Chap. v.
[2] *Trusts, Pools and Corporations* (Ripley).
[3] *Economic Journal*, June 1899, pp. 162–3.
[4] *Trusts, Pools, and Corporations* (Ripley), Bibliography.

These dates are significant, and they are confirmed by investigation into the history of the combination movement in U.S.A., as it is expressed in the Reports of the U.S. Industrial Commission and elsewhere. It can only be concluded that the modern combination tendency had become evident much earlier, and had developed much more rapidly in U.S.A. than in England. For about 1887, *i. e.* "a dozen years ago" in 1899, it had even become monopolistic, and had necessitated restrictive legislation in America.[1]

In striking contrast it appears that previous to this date, 1890, only two important "permanent" combinations had even been formed in England, viz. the Bathstone Firms, Ltd. (1887), and the Salt Union (1888). The latter soon proved an unsatisfactory project, and instead of calling for legislation to control any monopolistic tendencies, by 1890 it found the greatest difficulty in coping with the new salt-producing firms that had sprung up. As the list appended to this chapter shows, the formation of amalgamations in England does not set in on any considerable scale until about 1895–6.[2]

But what can be derived from a comparison with the case of Germany? It has been shown that the movement towards industrial combination reached full development in Germany during the years 1888 to 1891, and that a strong combination—the Potash Cartel—was formed in 1863.[3] Dr. Liefmann has summed up the position as follows—While the combination problem was already playing an important part in Germany there was hardly any mention of it in England.[4] By 1899 the movement in Germany possessed its own publishing organ in the Berlin *Industriezeitung*.

The network of combinations which developed within German industry, almost every branch of industry being honeycombed with Cartel organizations by 1895, is

[1] *The Economic Journal*, June 1899; pp. 162–72.
[2] Cp. *U.S. Industrial Commission Report*, Vol. xviii, Chap. ii, p. 14.
[3] *Ibid.*, pp. 143–4.
[4] *Schutzzoll u. Kartelle*, p. 7.

sufficient testimony to the rapidity with which the combination movement has proceeded in Germany. In the years following the industrial crisis of 1873 the movement towards industrial combination became particularly noteworthy. In 1876–7 arose the beginnings of a coal syndicate, which by 1901 had become in many ways the most important combination in Germany, if not in the world. From 1876 on, the movement became more important and rapid. In many cases German combinations during the seventies and eighties became so strong as to influence the markets of the world, so that foreign producers were seriously affected.[1] In 1897 there were said to be as many as 345 combinations in Germany, "including only combinations in the strictest sense of the word, excluding all local agreements on prices." Germany seems to be peculiarly the home of industrial combination so far as Europe is concerned, and instances can be multiplied to show how early and how rapidly the modern movement developed in Germany.[2]

What is the significance of these comparisons as regards the appearance and progress of the combination movement in English industry? In 1894 Dr. Liefmann concluded that "there was little talk of it in England." In 1899 it was considered that formal combinations were probably rare, and that the ill-success of the Salt Union afforded a standing consolation to those who believed that they could not take root in England, although informal agreements were by no means unknown.[3] In 1901 the U.S. Industrial Commission reported that although the looser forms of temporary combination had existed for some time in England, the permanent amalgamation or consolidation of independent firms was a form of combination that had become important only "within the last two years."[4] A significant feature is the lack of literature dealing with

[1] *U.S. Industrial Commission Reports*, Vol. xviii, Chap. v, pp. 142–3.
[2] *Ibid.*; *Die Unternehmerverbände* (Liefmann), p. 143.
[3] *The Economic Journal*, June 1899, p. 172.
[4] Cp. *The U.S. Industrial Commission Reports*, Vol. xviii, Chap. ii, p. 14.

the position of industrial combination in England about 1900. In fact, it seems that comparatively little reliable information is available as to the progress of industrial combination in England prior to the publication of the U.S. Industrial Commission Report, and Mr. W. H. Macrosty's book, *Trusts and the State* (1901). In compiling a bibliography there appears a lack of English books dealing with the movement in England, written previous to about 1900. This must afford an interesting and significant comment upon the position of industrial combination in England previous to this period. As has been pointed out, only two conclusions seem possible; either writers had intentionally neglected the subject, or the position of the movement in England had not become of sufficient importance to attract their attention until the years immediately preceding 1899. The latter conclusion is probably the correct one in view of the various evidence available. There certainly was a lack of literature; for as Professor Alfred Marshall wrote, about 1896, concerning the combination movement—"the problem cannot be solved for practical purposes without fuller statistics than we at present possess." [1]

A significant comment upon the position of industrial combination in England about the end of the nineties is seen in the attitude which was adopted by some writers with regard to the possibility of regulating competition by means of the combination and mutual agreement of firms, whereby all attempts to restrict competition by combination were regarded as futile and transitory. Industry in England still is and must continue to be dominated by the competitive system, and the power of combination as a check to "the reputed evils of competition" is ineffective and predestined to failure. The only check to excessive competition is the natural check of the continual elimination of the weakest and the survival of the fittest, etc. The general impression

[1] *The Economics of Industry*, p. 257, 2nd edition; *Monopole, Kartelle und Trusts*, pp. 160–9.

conveyed is that competition must be supreme and unimpaired; only in isolated cases have combinations been attempted, and these have naturally and necessarily failed effectively to regulate competition.[1]

However, in view of the subsequent developments of the combination tendency in England it seems necessary that our views in this connection should now be somewhat modified. It would not be possible to point to the failure of some temporary associations (which after all were really "speculative," and not "organized" combinations) as proof that "the power of combination is ineffectual as a check to the evils of competition." Neither could much be made of the weaknesses of some combinations. Truly, these afford a clear case of potential competition becoming actual so that mutual action of producers proved ineffective, and "competition reappeared even in a stronger form." But the new developments have proved that industrial combination has not only "checked the reputed evils of competition" but has gone further. In many cases, combinations of producing firms have actually succeeded in regulating output and prices in various branches of industry with a control that is certainly "appreciably monopolistic" in character. As may be seen later, such powers have been and are being exercised by combinations in England when they control the greater part of a trade. It would be difficult for some of the earlier writers on the competitive system to explain away or dismiss so easily some of the large amalgamations in the textile industries, for example, the Bleachers' Association, Ltd., the Bradford Dyers' Association, Ltd., the Fine Cotton Spinners' and Doublers', Ltd., etc.

Under special conditions it will be found that even combinations and agreements of producers essentially terminable in character have resulted in the restriction

[1] Cp. *The Industrial and Commercial History of England:* Chap. on Home Trade and Domestic Competition. (T. H. Rogers.)

of competition and the regulation of output and prices for considerable periods together.

It cannot but be suggested that the development of the combination tendency in England, since about 1890–2, and the powers of some modern combinations, would modify very considerably some of the views which have been expressed concerning the relations between competition and combination. For it must be admitted that many combinations of enterprises have been formed within English industry—the classic home of competition—which place very effective restrictions upon the operation of the competitive system.

However, the references indicated above are exceedingly interesting on account of the significant light which they reflect upon what may be termed the "chronological" position of the modern combination movement in English industry.

The first of the amalgamations in the textile industries, viz. Messrs. J. & P. Coats, Ltd.—"the Thread Trust"—was not formed until 1896; while the modern combination movement, speaking generally, did not attain to its fullest strength in England until the years 1898–1902. Consequently, writers upon the operation of competition previous to this period seem to underestimate the importance of industrial combination, judging by the extent of its subsequent developments.

As has been pointed out, what Adam Smith concluded would not come to pass seems indeed to have become a leading feature and factor in modern industrial organization. Dealing with corporations, he leaves with his readers the general conclusion that they would never play a very important part in the world as compared with individual or private enterprise. But industry has advanced along other lines as regards its organization. A variety of altered circumstances have given rise to a tendency towards the combination of individual independent producers into close and large "corporations." History seems to be repeating itself. Independent

producers are again combining in order to restrict the operation of competition.

For the position must not be misunderstood. The "modern" combination movement does not by any means represent the first efforts that have been made by producers and traders to restrict competition in their favour. Yet it certainly stands apart from any early instances of industrial combination on account of characteristics of its own, new and peculiar. The modern combinations represent a form of industrial organization which has arisen newly to meet the requirements of modern industrial and commercial conditions. Of course, it must be recognized that endeavours have been made under various forms to restrict competition right from the early times of industry and commerce. In fact, perfectly free competition has never existed. The self-interest of producers, local and physical advantages, difficulties of transport, etc., have long tended to produce restrictions upon "free" competition. The very atmosphere of early industry in England seems to have been one of monopoly and restriction. The restriction of trades and of certain classes of work in favour of certain sections of the community or of certain producers seems to have been an accepted principle. "The natural system of liberty"—competition—was not always considered "the life-blood of industry and commerce." Otherwise, what is the significance of the "stint" of the Merchant Adventurers,[1] of the limitations imposed upon competition by the "Hostmen of Newcastle," of the old regulations and restrictions of the chartered companies, of the Newcastle coal "Vends" from 1592–1844?[2] What is the place of the old exclusive privileges and the restrictions of corporations and gilds; of the local agreements of producers and tradesmen to regulate supply, and control (*i. e.* raise) prices? Why

[1] *Growth of English Industry and Commerce* (Cunningham), Vol. i, *passim.*

[2] *The Company of Hostmen of Newcastle-upon-Tyne—Publications of the Surtees Society* (Dendy).

did the authorities go to such trouble to establish and administer laws against agreements or contracts in restraint of trade? Why should Adam Smith so fiercely attack the various forms of restriction upon "the free and natural system of liberty"?

There must have been causes underlying such circumstances. It may be fairly concluded that efforts have long been made to regulate and control competition, prices, and output by means of common action and agreement.

Thus as regards the iron trade it is said that early producers like the Dudleys suggested to others the prices that should be followed, so that "they might compete not by cheapness, but by custom." This is also said to have been a practice in the early yarn trade.[1] Similarly, as has been indicated, the coal trade of Northumberland and Durham was largely regulated by means of combinations of producers, save for a few intervals, from 1592–1844. The Hostmen's Vends and the later "Vends of Newcastle" without doubt approach nearest to the modern forms of combination, resembling the German Kartels in several ways. Yet there are many vital differences between the early and the modern combinations. The conditions which necessitate such endeavours, and the circumstances which determine their effectiveness have changed entirely with the rise of new industrial and commercial conditions.

For example, it is very improbable that the regulation of the coal trade, exercised for so many years by the "Vend of Newcastle," could have been maintained even for one year under the modern conditions of the coal industry. The northern coalfield no longer controls the greatest part of the total output of coal. New coalfields have been developed, new collieries set up; the growth of the railway system and of various other transport facilities has brought numerous competitors into the field. The monopolistic advantages of the northern

[1] *Industrial and Commercial History of England* (T. H. Rogers), p. 372.

coalfield—its contiguity to the seaboard, the quality of its coal, its control of the London market, etc.—have been largely neutralized. Strong foreign competition has now to be faced in certain markets, *e. g.* Westphalian coal in the Mediterranean, North Sea, and Baltic ports.

Again, we find that one of the original motives of the Vend was to give the owners of mines which yielded inferior sorts of coal a chance to sell them. Shipowners preferred to load up only the best coals. The regulation of the Vend was largely intended to prevent the few best collieries monopolizing the coal trade, to the ruination of the poorer collieries and the detriment of the public. It put into practice a plan which was advocated by some as being advantageous to the public. The small volume of the trade controlled, and the conditions which determined the policy of the "Vend Committee" prevent any real comparison with the combinations of modern industry.[1]

Thus, although there certainly are features of similarity existing between the Vend and some modern forms of combination, the altered conditions of industry make it necessary to observe some distinction between them.

Taking other examples, there were loose combinations of the colliery owners of South Wales by 1864, and of master cotton spinners in Lancashire by 1857. Yet these early instances of combination arose largely as a means of uniting the masters in order to withstand the claims of Labour, which was rapidly becoming organized. This is especially so in the case of the South Wales Coalowners' Association, for it is expressly stated that this was the great cause for the formation of the original Aberdare Steam Coal Association.[2]

The point that it seems desirable to emphasize by means of such instances is this:—Although producers

[1] *English Industry and Commerce* (Cunningham), Mercantile System, p. 530; *A View of the Coal Trade* (Dunn), passim; *Monopole, Kartelle u. Trusts* (Levy), Part ii.

[2] *South Wales Coal Trade* (Wilkins), pp. 284–90.

have long endeavoured to regulate competition by means of mutual agreement and have combined for various purposes, yet the tendency towards industrial combination since about 1880–8 ought to be considered strictly as a modern development. Taking the case of the coal industry, and also that of the iron industry, for examples, it seems that it is mainly in these industries that organized or systematic attempts to restrict competition by means of industrial combination appear previous to about 1880–8.

It has been seen that the Newcastle Vend is really an exceptional example of systematic and organized combination to regulate competition. The more it is examined the clearer does it become that its methods, the elaborateness of its organization for determining outputs and prices, allotting shares of output to the members, etc., bear a striking resemblance even to the elaborate Kartel organizations. In fact, from this point of view one might almost say that it anticipates the Kartel somewhat.[1] There was a most elaborate system of statements, checks, allotments, fortnightly regulations, etc., which not only kept a limit upon competition and production, but operated in a most monopolistic fashion. Thus it has been said that the regulation of the Vend had become a real national grievance—"the injury of the nation and the community for the benefit and gain of the few colliery owners."

The strength, duration, and effectiveness of the Vend were really exceptional, especially as it was mainly based upon a terminable agreement, so that the members were bound to observe it only on their word and by a few private penalties.

Still more remarkable is its success when one contrasts the general weakness of subsequent attempts to regulate the coal trade right up to modern times. In few instances have such schemes for regulation been in any way effective for a considerable period. Of course,

[1] Cp. *Monopole, Kartelle u. Trusts* (Levy), Part ii.

attempts at combination have been made since the break-up of the Vend in 1844. But most of such attempts have been in vain, for as has been seen the conditions which enabled the Vend to operate so long and so successfully no longer existed. The whole aspect of the coal trade has changed. Although the Vend certainly was a successful and highly organized combination, yet one must observe some distinction between it and the modern combination movement. The variety of altered circumstances within the coal industry since 1844 seem to afford good reason for leaving even the Vend of Newcastle out of consideration in the scope of the present subject.

Even as regards the coal industry generally, where attempts to regulate competition are of the earliest origin, it can be concluded that the movement has exercised little decisive influence upon the trade in recent years. The peculiar reasons for the difficulty of establishing effective combinations in the modern coal industry must be considered later.

Taking the iron trades as another example, isolated instances of systematic combination of the modern kind first appear from about 1881, *e. g.* under the form of local agreements to limit the output of pig-iron in the Cleveland district; yet even these were often very informal and exercised little decisive influence until about 1885. In 1883, several English rail-making firms entered into an agreement with some foreign firms mutually to allot their respective market areas. The modern movement towards combination does not become clear and systematic in the iron and steel industries on any general scale until about 1888. It has been rightly considered that these early combinations were little more than local agreements, which were rarely effective checks on competition, and that the movement towards combination in these industries did not proceed nearly so rapidly as was the case in Germany or U.S.A.[1]

[1] *The Iron Trade* (J. S. Jeans), p. 205 and *passim*.

The development of the modern movement, even under the form of temporary, and usually local agreements cannot be placed much beyond 1885–8 even in the iron and steel industries.

The appearance of the permanent forms of combination therein is still more recent. In 1902 it was said that it was "only within the last few years" that the active movement towards the concentration of the independent firm in the iron and steel industries into large corporations had set in.[1]

The coal and iron industries have been taken as typical cases, and they go to show that the modern combination movement, even in its lowest form (that of temporary combination), does not exercise any considerable or decisive influence upon them as to structure and organization until about 1880–8. A review of the other great industries shows this even more clearly. Even temporary combinations of any systematic and formal character are lacking in the textile industries until about 1890. In 1894 the famous New Trades Combination Movement—the Birmingham alliances—was applied in the dyeing industries, without permanent success. The comparatively recent development of permanent amalgamations has appeared in the textile industries only since about 1895. Speaking generally, it is from about 1888 on, that the modern tendency towards industrial combination really becomes active, general, and fully "conscious" in English industry.

It might be well to indicate some broad conclusions which may be drawn from a general review of the position, for it seems possible to affirm—

1. That the restriction of competition has long been attempted under some form of combination on the part of producers and traders. Competition has never been perfectly "free," producers and traders have always been inclined towards mutual action in the common interest.

[1] Cp. *Report of the British Iron Trade Commission*, 1902, p. 168, *passim*.

2. That the earlier isolated and informal instances of combination may be fairly distinguished from the modern tendency towards industrial combination, for the purposes of the present inquiry. For the only possible connection between them seems to be through the temporary agreements to restrict competition by means of mutual action. The modern development of amalgamations or permanent combinations can be decisively and almost rigidly distinguished from any phase of the tendency towards the restriction of competition by means of the combination of producers, previous to 1888. Even the temporary forms of combination in the modern movement may be considered apart on account of the fundamental differences in the modern conditions of industry and commerce, their influence upon industrial organization, production and distribution.

3. That the modern movement towards industrial combination in England, in its most general aspect, cannot well be located much beyond 1880, and that its full development does not really set in until about 1888, subsequent to which date its influence has been greatest. Previous to about 1895 the influence of the movement has been slight as compared with the profound encroachments of the combination formed since that date upon the various spheres of competitive industry.

4. That comparison with the position in U.S.A. and in Germany in the above respects shows that the progress of the development has been far more rapid in these countries than in England; here the progress of the movement has been much more tardy and its influence less extensive.

Having located the " modern " combination tendency in point of time, and also as viewed in the present study, a few of its general characteristics may be indicated.

In its most general aspect, the modern movement towards industrial combination in England seems to possess a character essentially remedial and defensive, rather than aggressive or avowedly monopolistic in

intention. The early agreements of producers and traders seem to convey the impression that the only object in view was to secure the highest possible prices from consumers. Admitting that this is an important motive underlying the formation of modern combinations in England, yet it is by no means the chief motive. The combinations in America seem to savour strongly of monopoly as compared with the English movement, which, above all, represents a genuine attempt to restrict the disastrous operation of the competitive system. In most cases it will be found that this really seems to be one of the main motives for combination between various rival enterprises.

Secondly, it is the operation of the competitive system under the conditions of modern industry that has really given rise to the modern combination movement. The economic environment of modern industry and commerce gives the movement an aspect altogether new and peculiar. It is a modern movement largely necessitated by the requirements of modern industry. Its causes and the conditions which have determined its development and progress must therefore be considered from this point of view.

Again, as compared with earlier instances of industrial combination, one of the most characteristic features of the modern combinations turns upon the changes both as regards the "structure" and the "sphere of operation" of their organization. Most of the combinations previous to 1888 were local and confined in structure or extent, and also as regards their sphere of operation. Even the Newcastle Vend was extremely local in extent —confined to the Newcastle district—though the importance of its export trade widened the sphere of operation. On the whole, the early combinations were "intensive," they exercised considerable power over a small area. It is not until recent times that one finds instances of combinations national, and even international in extent or structure, much less in sphere of

influence. The lack of facilities for transport and communications would naturally tend to restrict the early combinations of producers in both of these respects.

However, speaking broadly, it is a general characteristic of the modern combinations that their organizers seem to aim at the development of a sphere of operation as wide and extended as possible. Some of the most complete instances of industrial combinations of modern form are those which possess a sphere of operation and influence national and even international in extent. The influence of the various combinations tends to extend itself as widely as possible. Their powers have well been termed "extensive" rather than "intensive" in character.

For, as is frequently pointed out in respect of the area and nature of markets in modern times,[1] the new and increased facilities for transport and communication have exercised their influence mainly in favour of the consumer. Their operation has been such that they tend to diminish the intensity of the pressure which producers, or a combination of producers, can exercise upon consumers. However, they have also tended to increase the area or sphere over which the producers can exercise their influence. For the varied facilities available allow and even assist a centralized organization to control a wide sphere of operation. The influence of producers or combinations of producers has tended to become extensive rather than intensive in character. So also, there are many other new factors in modern industry, such as the cosmopolitan character of industry and of capital, the increased facilities for handling vast quantities of goods, the interweavings of international interests, etc., which all exercise an influence in the same direction.

The modern tendency towards industrial combination might also be characterized as the natural and almost "normal" development of a new method of industrial

[1] Cp. *Some Aspects of Competition* (Marshall).

organization. It seems to represent the establishment of an organized method of restricting competition and regulating industry. For it must be generally admitted that the movement seems to have established itself permanently in many directions. Combined action on the part of producers appears to have arisen as a natural check upon individual rivalry, making industrial combination a new form of organization established by the efforts of producers in order to rise above the operation of the competitive system. As one writer has said—"It represents a form of organization for which producers have been seeking during the last thirty years." [1] Only with the modern combinations have these endeavours resulted in the establishment of a combined and in some senses a co-operative form of organization which has been able to exercise a decisive, continuous, and permanent influence upon industrial organization and also upon business and industrial relations generally. The combinations previous to 1888, probably even the Vend itself, had little permanent effect upon industrial organization. They seem to be a number of isolated attempts at common action on the part of producers. The modern combination really seems to represent a highly developed form of industrial organization which meets some of the requirements of modern industry, and also a more efficient and more profitable method of production and distribution. Moreover, the modern combination movement stands thus apart, new and peculiar, in that it has revealed itself under so many forms—"a hundred forms varying in durability and thoroughness." [2] This is a characteristic which must be kept in view at all times, otherwise undue limitation of view may hide many of the forms under which the tendency reveals itself. The characteristics mentioned above do not by any means comprise an exhaustive list,

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[1] *Trusts, Pools, and Corners* (J. S. Jeans).
[2] *Economic Journal*, June 1899, p. 166.

they are only intended to indicate some of the more general features of the modern tendency towards industrial combination.

However, they seem to afford ample reason for regarding the modern tendency towards industrial combination as being essentially a distinct movement. Only since about 1885 does it appear as a widely developed, fully-conscious, and deliberate form of industrial organization; the altered conditions of economic environment, of industrial and commercial conditions generally are of themselves sufficient to mark off the modern movement from the isolated instances of combination which are available earlier. In fact, it seems that the really important instances which merit attention are the Hostmen's Vends and the Vend of Newcastle. However, the tremendous alteration in the circumstances of the coal trade of England fairly rule these out of the present inquiry.

The foregoing seems to be admissible as a general estimate of the position of the modern combination movement in England. It is probable that few general propositions were ever formulated, particularly in Economics, which always applied without exception. Yet in the present case the possible exceptions do seem comparatively few; where they occur, their nature will be indicated. The general position may be summed up:—While there has long been a tendency to restrict competition by combination, only in comparatively modern or recent times (since about 1880) has the movement fully revealed system, deliberateness, thorough and consistent development throughout English industry generally.

Having indicated the general features and position of the modern combination tendency in England, the inquiry might next afford some estimate as to the forms of organization exhibited within it, and the directions in which its developments have proceeded. This is a necessary preliminary in order to prepare the way for

indicating the conditions which have caused or determined these developments.

The whole range of British industry is now too wide a sphere in which to attempt such an inquiry; it must deal with a more limited sphere. The industries to be considered are marked off by two limitations. Firstly, they are "competitive" industries, and secondly, they are the "great" or wide-working industries. The former demarcation limits the study to those industries in which prices, output, and the conditions of business generally have been mainly determined as the result of mutual competition between the various producing units, previous to the development of combinations between them. It thus excludes from consideration those branches of industry which occupy a position of monopoly on account of the possession of some public or legal privileges, which result in the restriction of competition within that industry, e.g., municipal services, railway transport, etc. The second qualification excludes from consideration the minor branches of English industry, local and retail trades, etc., and restricts the inquiry to the large manufacturing industries, e.g., the textile trades, the iron and steel industries in all their varied branches, the chief extractive industries, the chemical industries.[1]

Within the scope indicated, one must consider the influence of national and local conditions, of physical, industrial, legal, and political circumstances. This is necessary in order to estimate how far and in what way any particular features or developments exhibited within the general combination tendency are occasioned or determined by particular conditions.

In order to facilitate such an inquiry two complementary methods appear to be necessary. First, what has been termed the historical method, by means of which one can observe where and to what extent one

[1] Cp. *The Trust Movement in British Industry* (Macrosty), Introductory, p. 2.

form of combination has led to another, and also what has been the course of their development. By this means, too, the influence of preceding or underlying conditions can be better estimated, and the fundamental importance of the development of various industries can be indicated.

By the second method, that of comparison, one can estimate how the special circumstances of any industry, particularly as regards its general working, modify the development of the combination tendency within it. It has already been found useful to compare the movement in England with that in Germany and U.S.A. Such comparisons may be repeated since they serve to indicate the peculiarly "national" aspects of the combination tendency in England. It is the best, if not the only way rightly to estimate how the national conditions of English industry and commerce have given a particular national bias to the combination movement in England.[1]

It is seen that both methods are essential and complementary to one another. The modern character of the subject must tend to make the inquiry more or less analytic in character. One can only hope to make best use of existing material in order to analyse and develop it further, as may be possible in view of the comprehensive character of some recent publications. Moreover, the present time would seem very opportune for such an attempt to review and analyse the position as far as possible. For it appears that the tendency towards industrial combination has spent much of its original force in certain directions although it is maintained in others. It is useful, therefore, to compare or contrast various spheres of industry in this respect; for this task some degree of general inquiry is an essential preliminary.

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[1] Cp. *Industrial Combination* (Macgregor), Part iii.

PROGRESS OF INDUSTRIAL COMBINATION IN THE UNITED KINGDOM

A Table to indicate some of the principal Amalgamations formed up to 1901.

Year	Name of Amalgamation	No. of Firms	Original Capital
			£
1887	Bath Stone Firms, Ltd. (all existing firms save 1)	7	338,000
1888	The Salt Union	64	4,200,000
1890	The Leeds Fireclay Co., Ltd.		1,280,000
1891	United Alkali Co., Ltd.	49	8,500,000
1895	Liverpool Warehousing Co., Ltd.	6	1,050,000
	Second Period of Development		
1896	J. & P. Coats, Ltd.	5	7,498,680
Nov. 1897	The English Sewing Cotton Co., Ltd.	15	3,000,000
Dec. 1897	The Yorkshire Dyeware and Chemical Co., Ltd.	10	360,000
Jan. 1898	United Turkey Red Co., Ltd.	3	1,200,000
May 1898	Fine Cotton Spinners' and Doublers' Association, Ltd.	40	6,750,000
May 1898	The Linen Thread Co., Ltd.	9	2,000,000
May 1898	British Dyewood and Chemical Co., Ltd.	4	570,000
1898	American Thread Co., Ltd.	13	3,720,000
Dec. 1898	Bradford Dyers' Association, Ltd.	30	4,750,000
July 1899	Yorkshire Indigo, Scarlet, and Colour Dyers' Association, Ltd.	11	600,000
July 1899	The Bradford Coal Merchants' and Consumers' Association, Ltd.	8	350,000
Oct. 1899	The Yorkshire Woolcombers' Association, Ltd.	38	2,500,000
1899	The Borax Consolidated Co., Ltd.	7	3,200,000
Nov. 1899	The Woollen and Worsted Machinery Manufacturers' Co., Ltd.	7	290,000
Nov. 1899	The United Indigo and Chemical Co., Ltd.	8	250,000
Nov. 1899	Barry, Ostlere & Co., Ltd.	4	1,150,000
Dec. 1899	The Calico Printers' Association, Ltd.	60	9,200,000
1899	English Velvet and Cord Dyers' Association, Ltd.	22	1,000,000
1899	British United Shoe Machinery Co., Ltd.	4	300,000
April 1900	British Cotton and Wool Dyers' Association, Ltd.	46	2,750,000
July 1900	Bedford Lime, Cement and Brick Co., Ltd.		400,000
July 1900	Flax, Hemp and Jute Machinery Manufacturers, Ltd.		1,200,000
Dec. 1900	G. and J. Baldwin & Partners, Ltd. (hosiery yarns, wools)	6	850,000
Dec. 1900	Leeds and District Worsted Dyers' and Finishers' Association	10	180,000
Dec. 1900	Wallpaper Manufacturers, Ltd.	30	4,200,000
July 1900	The Extract Wool and Merino Co., Ltd.	7	340,000
1900	The Bleachers' Association, Ltd.	53	8,250,000
1900	The Associated Portland Cement Manufacturers, Ltd.	34	8,000,000
1900	The British Oil and Cake Mills, Ltd.	17	2,250,000
1900	The Rivet, Bolt and Nut Co., Ltd.	15	550,000
1900	The Wholesale Newsagents' Association, Ltd.	32	290,000

In the above list might be included—

The National Telephone Co.
The British Lustreing Syndicate.
The Scotch Oil Company, Ltd.
The Edinburgh Distillers' Co., Ltd.
The Lace Curtain Manufacturers, Ltd.
The Lace Dressers' and Finishers' Association, Ltd.[1]

[1] Cp. *U.S. Industrial Commission Reports*, Vol. xviii, Chap. ii, p. 14.

Chapter II

FORMS OF ORGANIZATION AND LINES OF DEVELOPMENT WITHIN THE COMBINATION TENDENCY

PART I.—DEFINITION AND CLASSIFICATION OF FORMS OF ORGANIZATION

At the very outset it would be well to adopt a clear definition of what is meant by the term "industrial combination." Throughout the present study it may well be used to indicate "a method of economic organization by which a common control of greater or less completeness is exercised over a number of firms which either have operated hitherto, or could operate, independently. This control may either be temporary or permanent, for all or only for some purposes." [1] Or more precisely, as a lawyer has defined industrial combination under the more general and more popular name of a "Trust," it includes "every act, agreement, or combination of persons or capital believed to be done, made, or formed with the intent, effect, power or tendency to monopolize business, restrain or interfere with competitive trade, or to fix, influence, or increase the price of commodities." [2]

The above forms of definition represent the view which has received the official approval of the American Census of 1900, in which the rule has been adopted to consider no aggregation of firms an industrial combination unless it consists of a number of formerly independent firms, which have been brought together.[3]

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[1] *Industrial Combination* (D. H. Macgregor), p. 1.
[2] Cp. *The Trust Movement in British Industry* (Macrosty), p. 2.
[3] *American Census*, 1900, Vol. vii, p. 75.

It is important to notice here that in popular usage the terms "Trust," "Trust movement," etc., have come to be used as a means of describing any development or form of industrial combination generally. However, in the present study it is well to reserve this meaning for the term "industrial combination," and restrict the use of the term "Trust" to describe a particular form of industrial combination to be indicated later.

Any definition of industrial combination must necessarily be wide both in its terms and also in its application owing to the great variety of structures and organizations which can fall within its scope. The combination movement in British industry exhibits the greatest variety as regards the lines of development and forms of organization within it. Yet all are marked by the principle of industrial combination—the surrender by the individual firms which combine of an increasing share of independence to carry on the work of production and distribution on competitive principles. In every case, the ultimate motive for combination is the same, viz., greater and more systematic control over the conditions of production and distribution, so that the various branches of industry may become more profitable to the enterprises which combine in order to regulate them.

This seems to represent the most general interpretation of the principle of industrial combination. If combination means anything at all, it means the combination or centralization in one dominant resultant organization of a number of member-firms which previously operated independently.[1] Similarly, it has been stated that the one common point about all forms of industrial combination is the combination of a number of capitals which previously operated separately. Such a view regards industrial combination as a resultant organization, and also as a historical process which

[1] Cp. *Trusts, Pools, and Corporations* (Ripley), p. 447.

refers to the contraction or combination of a number of firms into one firm and implies an antecedent period of independent competition; and this would seem to be necessarily so in every case. But some writers appear to interpret the principle of combination in some ways more liberally. For while asserting that industrial combinations are usually preceded by an antecedent period of competition, they do not appear to hold that this is always necessarily so. Industrial combination may thus refer only to the resulting structure, or to the control of one organization over a number of parts, as when a firm extends its sphere of operation by establishing new branches in markets or centres previously untouched by it. Such a view seems open to some criticism as being rather too liberal an interpretation of the principle of industrial combination, unless accompanied by some special explanation and application. For, however a firm may extend its markets by the establishment of new branches, etc., strictly speaking it remains one and the same firm. The expansion of one firm may certainly involve the control by one organization of a number of parts; but the case differs considerably from that of a number of independent firms which are deliberately combined under the control of one organization. Such a process involves the combination and contraction of a number of firms into one firm. In such a case industrial combination involves both a historical process and a resulting organization.

Of course, the intensity of the control of the resulting joint organization can vary, as also its exact form, intended duration, or sphere of influence. But the essential feature must be the definite combination of a number of formerly independent firms which have been brought together. The obvious interpretation of the combination principle relates to the control of a number of firms, formerly rival competitors, by one joint organization. The unit of combination ought to be strictly interpreted as the firm which has operated or

could operate independently for the efficient production and distribution of any particular commodities, and not as the number of parts or incomplete organizations which have been gathered up under one control. Investigation shows that in almost every case industrial combination, in its various forms and developments, is definitely and deliberately "entered into" by the firms which are included in any particular combination. The "parties" to the combination are independent and efficient producing units, which combine in order to escape the disastrous consequences of competition and to secure a more complete control over their particular branch of industry. It is obvious that this must be essentially so in almost every case of industrial combination. Where the firms combining are engaged in the same industry, or on the same level or stage of an industry, their horizontal combination must involve both a historical process of contraction following a period of competition, and also a resulting organization which unites them all in one firm. The liberal interpretation of the combination principle appears to be possible only under particular circumstances, as when a number of firms which have been engaged at different stages of an industry combine together, *e. g.* an iron-producing firm and a firm engaged in making steel or tin plate. This is, of course, a different case to the combination of a number of iron producing firms, or tin-plate manufacturers. For in the latter case, the firms combine after a period of independent competition—of direct mutual competition in the same markets; whereas in the former case the firms are engaged on different levels, and therefore do not compete directly in the same markets. Consequently their combination cannot be preceded by an antecedent period of direct competition, and it therefore has more particular reference to the resulting structure and organization.

But even this case involves or presupposes an antecedent period of competitive industry of some character.

The combining firms are not direct competitors, but indirect competitors. The finished product of one firm is the raw material of another, consequently competition, multiform in its operations, takes the shape of friction in their bargaining relations which must be eliminated by means of industrial combination.

However, there is one development of industrial combination, in particular, to which the liberal interpretation seems to be applicable, namely, that in which one firm progressively expands its resources so as to cover a variety of processes and products. For, as will be seen, such firms contain a number of parts which can operate independently should the need arise; and there is every reason to interpret the principle of industrial combination in reference to such firms in the more liberal sense, considering their development more from the point of view of the resulting structure. For close investigation shows that in many cases such firms, which are found usually in the iron and steel industries, have at some period in their history secured their position for future development by some accretions of strength through the absorption of other units. Consequently, this particular application of the definition of industrial combination must be pointed out when the nature of this development is considered.

Throughout the main portion of the inquiry, however, industrial combination must be interpreted so as to involve both a historical process of combination following a period of direct competition between the combining firms, and also a resulting structure—one which involves the control of one dominant, resultant organization over a number of firms which have previously operated, or could operate, independently.

At this stage it might be well to adopt a brief classification of the chief forms of organization which can be discerned within the combination movement. For this is a portion of the problem which lies near the surface and therefore readily admits of investigation. It has

also been largely dealt with by numerous writers, since the various forms of combination present several common features in all the countries within which the tendency towards industrial combination has been exhibited. Some preliminary classification is essential for the present inquiry in that it will serve to open the way for the investigation of the main lines of development along which the general combination tendency has proceeded.

There are really three fundamental standards according to which the various forms of industrial combination can be satisfactorily classified, viz. (1) the intended duration of the combination at the time of its inception, (2) the structure or the character of its organization, (3) the degree of control which the combination exercises over production and distribution in the industry concerned. It is clear that these standards are by no means rigidly distinct or mutually exclusive. Thus, for instance, the control of a combination of enterprises over a branch of industry is largely influenced by the intensity of its organization—the control of the joint central management over the combining members. Similarly, the organization of a combination will be largely determined according to the intentions of the parties which organize the combination as regards its duration, powers, etc.

Although they are by no means mutually exclusive or rigidly distinct in actual practice, the various forms of industrial combination classified according to these standards may be temporarily isolated for the purposes of investigation. When estimated according to the first two standards of classification, the various forms of industrial combination can at once be broadly yet decisively divided into two main classes, viz. temporary combinations or associations, and permanent combinations or amalgamations. As the name suggests, the temporary combinations comprise those forms of industrial combination in which the firms combine only for a limited period, which is usually agreed upon before-

hand. The permanent combinations or amalgamations are those in which the firms unite or amalgamate for all time—they are permanent in intention. Obviously, the organization or structure of the latter class of industrial combinations must also be much more intense than that of the former. The firms are combined into one company and therefore are not only united for all time but also for all purposes.

The central management naturally has full and complete control over the functions and resources of the combined firms, which lose completely their individual identity and independence; these are merged in a common organization comprising them all. The resulting combination has legal standing and corporate existence as one company.

Not so with the temporary forms of combination. They have no corporate existence and lack legal standing and recognition. In England (and with an even stricter interpretation in U.S.A. and France) the common law regards temporary combinations of firms as contracts in restraint of trade which are not legally enforceable.[1] Consequently, the agreements under which the firms temporarily combine must secure their sanction by means of private penalties for breaches of the agreements, *e. g.* expulsion of defaulters, money fines, etc.

It is a natural consequence that the internal organization and structure of these forms of temporary combinations are diffuse and not intense. For the control of the central organization over the combining members is not absolute and authoritative, supported by the legal sanction of the articles of agreement.

This is a first indication of the profound influence of legislation or lack of legislation in a country upon the development of the combination tendency within it, as regards the form of organization developed.

In Germany, the articles of agreement under which

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[1] *U.S. Industrial Commission Reports*, Vol. xviii, *passim.*

firms combine temporarily are legally enforceable. Consequently, they are binding and effective, and strengthen the powers of the central management over the members. Permanent combinations have not been so largely developed or resorted to in Germany, partly on this account. The legal standing of temporary combinations makes them exceedingly effective, and the distasteful sacrifice of identity can be avoided by firms desiring to limit competition. In U.S.A. the common law has been extremely strict in forbidding the temporary combinations of firms as contracts in restraint of trade, and in dissolving them even though they may not be unreasonable. In England, the attitude of the law has been mainly negative. It has refused to sanction or enforce such temporary combinations. Thus, while they were abandoned in U.S.A. in favour of permanent amalgamations, temporary combinations have continued to develop in England really as private agreements between the combining firms, enforced by private penalties and only operative for agreed periods and purposes. Thus, the temporary combinations do not involve the sacrifice of independence by the combining firms for all time and all purposes as is the case in the permanent combinations. The enforcement by private penalties, and not by law, of the agreements upon which temporary combinations are based, obviously has an important bearing upon the control of the central organization over the combined firms and thence upon the industry concerned. This becomes evident when the various forms of temporary and permanent combination are examined according to the third standard of classification. It is possible to discern different forms of organization within these two broad classes of combination, while between them there exist intermediate formations. These various forms differ as regards economic structure, organization, and function, and also as regards the control exercised over production and distribution in the industry concerned.

Estimating according to the third standard of classification, the simplest class of temporary combination is that referred to by Mr. H. W. Macrosty [1] as comprising those formed to regulate the conditions under which rival firms sell and deliver their products. They aim at the elimination of losses entailed through undercutting as regards discounts, rebates, conditions of delivery, etc. This class is usually found in industries where the producing firms come into close or immediate contact with large wholesale or retail buyers, *e. g.* the National Association of Soap Manufacturers; the Association of Paper-makers; and the Association of British and Irish Millers.[2]

A stronger form of temporary combination aims at the direct regulation of production, whereby the combining firms seek to adjust supply to demand by means of periodic regulation of the outputs of the member firms according to circumstances. As a result of this they also hope to control and influence prices. Such an endeavour has long been made by producers, even since the early days of English industry. At all times producers have felt that if they could control, *i. e.* "stint," supply, they would be able to regulate prices. Masters and men alike have been affected by it in more recent times, *e. g.* the stop-day policy of the South Wales Coal Sliding Scale, "Mabon's Monday," the short week of the Manufacturing Board in the tin-plate trade of South Wales, etc. This regulation of output by temporary associations of producers takes several forms—the determination of the total output and allotment of individual quotas, pooling of outputs, etc.; yet all are equally ineffective as a satisfactory means of eliminating competition, much less of regulating prices. They fail to secure the faithful observance of agreements and constant adherence of members. Under the modern con-

[1] *The Trust Movement in British Industry*, Introductory, p. 6.

[2] Cp. "Kartelle zur Regelung des Angebots": *Über Kartelle* (Grunzel), Part ii, p. 39.

ditions of machine production it is especially undesirable to restrict output. The cheapest production is usually the largest and most continuous. Members soon tend secretly to exceed the quantities allotted to them. The elimination of competition and regulation of prices by this method is thus very difficult and doubtful as to its ultimate effectiveness. By means of a stronger form of temporary combination the member firms seek to control prices directly by fixing minimum price lists from time to time according to the state of trade. The effectiveness of these combinations varies with the intensity of their organization and the proportion of producers included. Some of the most formal have arisen in the iron and steel industries. Since these "price agreements" are not legally enforceable, they are extremely fragile and uncertain, particularly where trade conditions are unfavourable. The legal defects are aggravated by economic weaknesses. As has been said, the weakest members of such combinations of firms are usually the rulers. They stand to gain most owing to the advantage given them over strong firms, who could oust them from the open market. The latter chafe against restrictions placed upon them; thence mutual distrust and suspicion arise. Members do not faithfully observe agreements, but undercut secretly. The aim of the association is defeated. A survey of the history of temporary price associations, output and profit-pooling schemes, and similar formations, leaves the conclusion that they are usually ineffective as a means of eliminating competition and regulating prices continuously, unless their articles of agreement are legally enforceable and the central management has some direct control over both output and prices; and also unless the conditions of the industry generally are favourable. They are defective from both the economic and legal points of view. Consequently, they fail satisfactorily to eliminate competition between the combining firms, or to effect the regulation of output and prices continuously.

Moreover, these lower forms of industrial combination do not provide a sufficient degree of control over the constituent members, nor do they enable the combining firms to secure any of the "savings of combination."

A stronger form of temporary combination represents an endeavour to control both output and prices by means of a common organization. A central agency representative of the combined firms takes entire control of certain functions which are given up by all the firms. This central organization frequently determines the total output of the works over stated periods, allots it in shares to the various members, fixes prices, and conducts all the relations between the producers and customers. It takes charge of all the distributive process, and usually seeks to regulate output and prices. The combining firms retain control over the technical processes of production. Organizations falling within this class of temporary combinations have become extremely intricate and elaborate in Germany under the form of "Kartelle." The favourable attitude of German law, which recognizes them and enforces their regulations, the German faculty for organization, tariff protection, etc., have tended to foster their development.[1]

In England, such organizations are usually termed "Sales Associations," and there are several instances of such temporary combinations which approximate to the German Kartelle, *e. g.* the North-Western Salt Co. (1906), the Industrial Spirit Supply Co. (Nov. 1907), and the Central Thread Agency.

The importance of this class of organization within the English combination movement is such that it will necessitate detailed treatment later as representing a separate line of development.

But it is important to notice that this form of temporary combination introduces or assimilates into its organization a permanent element. It is true that the

[1] Cp. *Über Kartelle* (Grunzel); *U.S. Industrial Commission Reports*, Vol. xviii, Germany.

combining members surrender their independence only for a specified time, and for specified purposes, *e. g.* for the joint regulation of output, sales, prices, etc. Similarly there is no sacrifice of identity, for the combining firms do not sink their individuality in a new enterprise; there is only a merging of certain functions for a certain time, and the delegation of them jointly to a common central organization. Nevertheless, this central agency is usually a distinct organization, often a Joint Stock Co., with nominal capital, in which the associated firms hold shares. It has, therefore, a corporate and stable form of organization, legally recognized. When the central organization is not a company, it takes a quasi-permanent form by the establishment of a permanent secretary, or a permanent executive. This fact is of twofold importance. It involves the introduction of an element of permanent combination, and also it is a recognition of the necessity for some permanent element in a combination of producers, if it is to attain its objects in any effective and continuous manner.

For it has been found that purely temporary combinations, whatever the particular character of their organization, are ultimately unable to eliminate the competition of the combined members. The inherent defects of temporary combination as a form of economic organization make the realization of these aims impracticable in any continuous manner, or in any full and complete degree, unless some permanent element be introduced or assimilated. The non-recognition of temporary combinations by English law only aggravates these weaknesses; a more effective and satisfactory means of eliminating competition and regulating industry is sought by an advance from the temporary forms of combination towards the formation of permanent combinations or amalgamations. This is the only means of avoiding the economic and legal defects of the former as means of eliminating competition and if possible of regulating output, prices, and trading con-

ditions generally. Hence the advance seems to take place as a natural development made necessary by the force of circumstances.

Numerous instances can be found in English industries of permanent combinations which have arisen on the structures of temporary combinations, which had proved unable to cope with the difficulties of controlling competition but furnished a basis for permanent union.[1] As regards the general aspect of this question, it appears that permanent combinations tend to develop naturally from temporary associations in many cases:—A first step towards these permanent amalgamations was generally a temporary association or cartel—to use a German term—of rather a loose kind; while a pooling of gains often drifts into complete consolidation . . .; when once the pooling (or temporary combination) has begun, the combination development is on an inclined plane, and every step hurries it on faster towards what is virtually or actually complete amalgamation and consolidation. . . .[2]

Although the economic structure, influence, and operation of temporary combinations and permanent combinations certainly do differ considerably, and although they may be developed in different ways, yet their features of similarity hardly allow them to be considered different in nature, as has been sometimes asserted.

While the combinations within each of these broad classes exhibit many forms and many methods, the fundamental motives underlying them are much alike in every case, viz. the elimination of competition and the joint regulation of industry to the mutual advantage of the combined producers.

Of course, it must always be recognized that there

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[1] Cp. *The Trust Movement in British Industry* (H. W. Macrosty), Introductory, p. 14.

[2] *Principles of Economics* (Marshall), Book iv, Chap. xii, p. 447. *Some Aspects of Competition* (Marshall), pp. 17, 18.

must be certain fundamental points of difference between these two broad classes of combinations. Temporary combinations are essentially agreements for a time, which may involve the fusion of certain functions, but never the full surrender of independence and identity on the part of the combining firms. Permanent combination involves the complete amalgamation of the identity and functions of the combining firms for all time and all purposes. These fundamental differences remain however much they may be obscured in practice; still, they should be regarded as differences in "degree" and not in "kind." The natural steps in the development have been well summed up:—Attempts to reconcile the conflicting interests of rival firms have produced some form or other of voluntary association to control selling prices; but these bodies, even when guarded by the provision of money penalties for the breach of rules, may at any time be wrecked by the greed of one member, or the starting of a new competitor. Sooner or later they break down, and the firms either slip back into the slough of bankruptcy, or advance naturally to the consolidation of the rival firms in one large company. Experience has proved that the latter policy is usually adopted.[1]

Resuming the classification of the various forms of combination, and advancing from weaker to stronger forms according as the control over industry increases, what forms of organization can be discerned within the broad class of permanent combinations or amalgamations —the complete fusion of the combining firms in one company for all time and all purposes?

In popular usage the term "Trust" is generally applied to this class of industrial combination somewhat indiscriminately; but it seems essential to point out an important distinction which might be made as regards its application to English industries, wherein the

[1] *Encyclopædia of Social Reform*: "Trusts" (H. W. Macrosty).

development of permanent combinations has been distinctive and peculiar.

For a more exact classification of the forms of permanent combination seems to centre around the meaning given to the term "Trust." Originally it was the term applied to the combination of a number of independent enterprises through a board of trustees, to whom the shareholders assigned their shares, receiving in lieu certificates equal to the amount of shares surrendered. Dividends were paid on these certificates, and the trustees secured full and complete control over the combined enterprises.

Subsequently, this term has been applied indiscriminately to any form of permanent combination, and frequently extended in popular usage so as to include even the various forms of temporary combination. Admitting that every class of combination exhibits the trust principles in different degrees, it still seems necessary to observe some distinction in applying the term to the forms of permanent combination discernible in English industry. Passing over differences in the legal or corporate characteristics of amalgamations, *i. e.* whether they are holding companies, complete mergers, or private companies, etc., two broad classes of permanent combinations can be discerned. These classes represent combinations which differ as economic entities according to the standards of classification adopted earlier—the duration and intensity of their organization, their structure and functions, and the nature of the control exercised by them over the branch of industry concerned.

Briefly indicated they are: (1) the class representing the mere amalgamations of enterprises or capitals into one permanent company which effectively puts an end to the competition of the combining firms and secures the "economies of amalgamation"; (2) the class comprising combinations of enterprises which not only produce this result, but go further and give the resulting

organizations an appreciable or substantial degree of monopolistic control over the branch of industry concerned.

It is for this latter class of amalgamations that the term "trust" must be specially reserved in the present inquiry, and not applied without distinction to every amalgamation of enterprises or capitals, great and small alike. The permanent combinations which can be considered as "trusts" are those involving a consolidation of capitals or enterprises within an industry that is large enough and strong enough to regulate, in a manner appreciably monopolistic, the output and prices of the products with which it is concerned; or again, as Dr. Marshall has put it, "Single corporations so strong as to obtain a dominant control approaching monopoly in some large branch of business."[1]

Of course, it must be recognized that this monopoly power is entirely a question of degree. No trust can always be the sole source of supply throughout the whole of its market, or entirely without actual or potential competition which tends to limit its control over prices. Above all, the demand of the consumer can never be controlled by it, and the law regarding the elasticity of demand is continuously operative. There is also the possibility of consumers making use of substitute commodities. There are various natural limitations to the powers which may be exercised even by a monopolistic combination.

In classifying the forms of permanent combination thus, a definition of the term "trust" is adopted at once wider and narrower than is indicated by certain common uses of it. For it is sometimes restricted to permanent combinations formed after the manner of the original trust, and at other times is used to embrace every form of combination, permanent and temporary alike.[2] We have thus to consider two broad classes of

[1] *Memorandum to the House of Commons on Fiscal Policy*, 1908 (n.).
[2] *The Evolution of Modern Capitalism* (Hobson), p. 185.

permanent combinations—one including amalgamations of enterprises which possess this dominant control approaching monopoly, whatever their legal standing or corporate character may be, whether formed by absorption of weaker firms in a stronger firm, fusion of equal or of unequal rivals, etc. A few typical instances of this class of combination in England are: the Calico Printers' Association, Ltd., the Bleachers' Association, Ltd., the Wallpaper Manufacturers, Ltd., the Associated Portland Cement Manufacturers, Ltd., the Bradford Dyers' Association, Ltd., the Fine Cotton Spinners' and Doublers' Association, Ltd.[1]

The other class of permanent combinations comprises those amalgamations of enterprises which do not possess this dominant control approaching monopoly. The fusion effectively eliminates competition between the combining firms and secures most of the economies of amalgamation, but does not go further from the market point of view.

Judged according to the third standard of classification, viz. the degree of control over production and distribution, this class represents a lower or weaker form of amalgamation than the "trusts," as strictly defined. Numerous instances of this second class can be found, *e. g.* in the exhaustive compendium of combinations in England compiled by Mr. H. W. Macrosty.[2] So extensive is the scope of the latter that it affords an inexhaustible source of sifted materials available for further development.

An interesting means of distinguishing between these two classes of amalgamations is to contrast or compare their respective positions in relation to foreign competition, so vital a force in English industry and commerce under our Free Trade system. However concentrated home industries might become by means of the amalgamations of the latter class, it is extremely

[1] *U.S. Industrial Commission Reports*, Vol. XVIII, Part i, ch. ii.
[2] *The Trust Movement in British Industry.*

improbable that this factor would of itself give the enterprises any dominant control approaching monopoly.

The "trust" exercises this dominant control in a branch of industry on account of conditions other than the mere amalgamation of existing enterprises. Doubtless both these classes present many features of similarity as regards their economic structure and functions, the substitution of mutual action for independent rivalry, the saving of economic wastes, etc. However, the formation of the "trust" is influenced by a further motive, namely, the desire to realize to some degree the possibilities of securing a monopolistic control over prices in an industry. The perusal of the prospectuses of English "trust amalgamations" shows how emphasis is placed upon "the percentage of trade controlled," . . . "the position of monopoly possessed by the firms already in the trade," . . . "the consequent anticipations with regard to prices and profits."[1] The amalgamations within this class are in every case supported by some substantial basis of monopoly, *e. g.* privileged control of water supply by a limited number of firms, of raw materials, of old established brands, patent processes, and trade connections. In such circumstances the firms are usually induced to combine in order to utilize to the full certain privileges possessed by them all in common, and by them alone. Of course, it is also necessary that certain other conditions should be favourable in the industries concerned.

The position is well illustrated by the Federal Steel Co. and the American Tin-plate Co. "Both have been called trusts, yet the former was merely a combination of interests to develop an industry; no monopolization was intended. The latter aimed at combining a number of works to destroy competition. Americans themselves are not unanimous in their definition of the word: one defines it as a means of 'snuffing out competition';

[1] *U.S. Industrial Commission Reports*, Vol. xviii. Appendices to Part i.

another as 'a dominant combination of money, property, business, or commercial power or energy.'" [1] This distinction or discrimination in the use of the word "trust" appears to be quite legitimate, and will also help considerably to facilitate the present inquiry.

These two broad classes of amalgamation suggest another more general classification which can include all the forms of combination, temporary and permanent alike, viz. combinations of enterprises, temporary or permanent, which during their establishment exercise a degree of control appreciably monopolistic in character. Instances can be given of temporary forms of combination which under special conditions exercise considerable control over prices in a most uniform manner, and for considerable periods together. This broad class of monopolistic combinations illustrates what is frequently referred to, viz. that every movement towards industrial combination and towards concentration of production and distribution contains within it a tendency towards the development of monopolistic combination. Here, as throughout, it seems largely a question of the degree of control exercised by the combined enterprises.

The foregoing classification is not put forward as being completely exhaustive; thus there are other forms of temporary combination, *e. g.* agreements between firms to allot their "privileged" market areas and determine neutral territory in which prices are to be decided by competition. Also, firms can agree as to the amounts of the tenders to be submitted for various contracts, or to allot orders in rotation—a practice which may be more widespread than is generally known, owing to its secrecy. Somewhat alike are the "gentlemen's agreements" or informal arrangements between firms to restrict competition and fix minimum price lists, to help each other in times of depression, labour disputes, etc. Again, there are the temporary associations which have

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[1] *Tariff Commission Reports*, Vol. i, § 123.

been formed in the cotton industry or in the tin-plate trade to run short time until a glut of products is removed.

However, the general classes indicated above represent the main forms of industrial combination which can be most readily distinguished, although the lines of distinction must not be drawn too rigidly or sharply. Each form shades off gradually into the others in actual practice. Yet they can be isolated temporarily for the purposes of inquiry, so as to afford convenient centres around which to group the "lines of development" which can be discerned within the combination tendency generally.

PART II.—THE "LINES OF DEVELOPMENT" WITHIN THE TENDENCY TOWARDS INDUSTRIAL COMBINATION

General Characteristics.

The general tendency towards industrial combination finds its origin in the operation of the competitive system, out of which it arises and which it is intended to control. "In Europe, as in the United States, combination grows out of and is the natural development of competition." But the operation of competition, the relations between competition and combination, and the lines or directions of development exhibited within the combination tendency, reveal peculiar national characteristics in England, as is the case as regards the other countries within which the movement is exhibited.[1] These peculiar features or phases are determined by national conditions, maybe natural, legal, or economic, and by the special conditions of various industries.

[1] *U.S. Industrial Commission Reports*, Vol. xviii, Summary.

Under the operation of such circumstances it seems possible to discern some half-dozen main lines of development within the general movement towards industrial combination.

First and foremost comes the development of horizontal combination, which seems to exhibit itself in three directions—viz. (1) in the development of temporary associations; (2) in the subsidiary development of "hybrid" or "intermediate" formations—the sales associations, modelled on the German Kartells in some cases—a temporary combination assimilating a permanent element; (3) in the formation of permanent combinations or amalgamations of the two classes indicated.

The development of horizontal combinations in these three directions seems a characteristic feature of the combination movement in England. It is the governing factor in the operation of the combination tendency throughout the most of our industries. This is naturally and necessarily so, since the principal motive underlying industrial combination is the elimination of direct, mutual competition in favour of common action between rival firms. For horizontal combination is the development by means of which a common control of greater or less completeness (according to the form of organization adopted) is exercised over a number of previously independent firms, operating in the same industry or at the same stage of an industry, and competing directly in the same markets. In short, horizontal combination is the development which arises between firms operating and competing on the same level of industry. This development proceeds in either of the three directions indicated, largely according to the causes which give rise to it, and the conditions which determine its course—the desires of the combining firms, the circumstances of the industry in question, etc. All such conditions exert a modifying influence which must be duly observed and estimated.

In contrast to the development of horizontal com-

bination in these three directions, another line of development has been indicated, viz. the tendency towards the formation of vertical combinations. Owing to their special circumstances, this line of development is to be seen, above all, in the iron and steel industries, though indications of its existence and operation have been found in other branches of industry. Although it is most clearly evident only in the iron and steel industries, it certainly is none the less a co-ordinate and distinct direction of development discernible within the general combination tendency in England.

For it seems quite distinct from the general process of integration which has long been operating continuously in industrial organization, crossed by an opposite tendency towards differentiation.[1] This process of integration refers to the growing intimacy and firmness of connection which arises between the separate "parts" of the industrial organism, the linking up or integration of processes within a firm, or within industry generally. The development of vertical combination is probably related to this process of integration from an economic point of view. For every industry is connected with a number of other industries engaged upon "processes" anterior to, subsequent to, or subsidiary to the operation with which it is itself concerned. This forms a basis of integration, so that the best developed of a series of "processes" thus related tends to absorb the others.[2]

So also in the formation of vertical combinations the best developed of a series of "firms," related through their being engaged in connected industries, or at connected stages of an industry, tends frequently to absorb the others. The point of distinction lies in the fact that in the latter case—vertical combination—the units in the combining or uniting tendency are independent

[1] Cp. *Principles of Economics* (Marshall), Book IV, Chap. viii, "Industrial Organization."

[2] Cp. *Evolution of Modern Capitalism* (J. A. Hobson), p. 142.

firms or enterprises, absorbed by a main unit, or amalgamated in one new company, and not processes, as is the case in the method of integration.

Thus we may define the development of vertical combination as that by which all processes of production, direct and indirect, from the provision of the raw materials to the sale of the finished products, are concentrated or combined under the control of one firm as the result of the combination of a number of formerly independent firms. As will be seen later from examples, the development of vertical combinations in English industry is the result of a policy of combination deliberately adopted by the combining firms in order to meet modern industrial conditions.

The general motive is really the same as in every development of combination, viz. the desire to avoid the evil effects which can arise from the operation of competition. But in this case it is an aspect of its operation different from that which occasions the horizontal developments. In the latter the combining firms seek to end the direct competition between them in the same markets.

In the development of vertical combination the combining firms do not seek to end a period of "direct" competition because they operate at different stages of industry. But they are in constant connection and bargain mutually for the supply of each other's products. Thus, by combining in a vertical combination they seek to eliminate the loss and friction involved in their mutual bargaining relations. The firms are so related that the finished product of one constitutes the raw material of the firm carrying on the next higher process, or so that the firms operating at the higher stages furnish the markets for those at the lower stages. By vertical combination they avoid the friction of competition in their mutual relations, and also the overlapping, surplus, or scarcity of supplies; and also the difficulties of marketing which must arise while each is an independent

firm. However, the development of horizontal combination in the directions indicated, and that of vertical combination, alike represent an effort to rise above the general operation of competition by uniting the forces of previously competing firms under the control of one dominant unit, which shall more profitably regulate industry, and control prices and market conditions in the common interest. It is the methods of attaining these ends that are different. In the horizontal development the combining firms seek to eliminate their direct mutual rivalries and to regulate industry by giving up their independence to a common organization. With the vertical development, the combining firms seek to regulate industry more to the common profit, and to end their indirect competition by directly increasing the competitive strength of the dominant resultant unit which shall continue the struggle with similar units in various markets. It is interesting to notice that the vertical development of industrial combination may proceed forwards, backwards, or laterally. The "lateral" form is exhibited when the combine is negotiated between firms with the aim of controlling substitute commodities for the sake of retaliation, or resource in competing with other firms. Thus the Standard Oil Co. is said to have secured control over gas-producing companies. The development of vertical combination "backwards" has as its primary motive the control of the lower processes in an industry. Thus the steel-making firm of Messrs. Dorman, Long & Co., combined with the firm of Bell Bros., Ltd., which produced iron from its own supplies of raw materials—ores, limestone, coal, etc. Also, the firm of Baldwins Bros., makers of tin-plates, galvanized sheets, etc., combined with Wright, Butler & Co., and the Bryn Navigation Coal Co., Swansea, in order to control its supply of iron, steel, and coal. The development "forwards" is exhibited when a firm seeks to control the more advanced stages in its line of industry. Thus Cammell & Co.,

heavy steel producers, combined (1903) with Laird Bros., engineers and shipbuilders. These features may serve as a general indication of the character of the vertical development of combination, its detailed analysis must be taken later.

Another noteworthy tendency exhibited within the general movement is that referred to by the U.S. Industrial Commission as the "no less striking," and "still further tendency towards making existing combinations much more complete in the control which the central management holds over the different members."[1]

Like the movement towards the formation of the "hybrid" combinations already referred to, this subsidiary tendency is of comparatively recent origin. Its operation seems to extend throughout every phase of the combination movement, temporary and permanent, vertical or horizontal, and its influence is exhibited in the "schemes of reorganization" carried out in some of the leading English "trust" amalgamations, *e. g.* the reorganization of the management and administration of the English Sewing Cotton Co., of the Associated Portland Cement Manufacturers, Ltd., or the reconstruction of the Bleachers' Association, Ltd., under new articles. But it is the complete reconstruction of the Calico Printers' Association, Ltd., so as to centralize its management and increase its efficiency, that affords an excellent instance of the influence of this tendency. The report of the Investigation Committee which recommended this reconstruction is not only one of the most important sources of information concerning the organization of industrial combinations in England, but it also illustrates the circumstances which necessitated this "still further tendency" towards centralization within the general combination movement.[2]

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[1] *The U.S. Industrial Commission Reports*, Vol. xviii, Part i, p. 14.

[2] *The Trust Movement in British Industry* (H. W. Macrosty), Appendix iv.

In the forms of temporary combination the influence of this tendency may be discerned in the efforts made to overcome their weaknesses of organization by concentrating the functions of the various terminable combinations upon permanent officials, standing or central committees, comprised of a few representative members. Indeed, the development of the hybrid Sales Associations seems akin to this subsidiary tendency in that it represents an attempt to increase the control of the central management over the different members by means of a permanent central organization, entrusted with the work of distribution. However, in the combinations which are purely temporary in character its operation is observed mainly in the establishment of some permanent headquarters, regular periodic meetings, the appointment of an official secretary or executive, as an administrative organ to carry out the decisions of the central committee of a few representative members; these decisions are regarded as final and binding upon all the associated firms. The obvious motive of this tendency is the desire to make the control of the resultant combinations over the combining members, in all the different cases, as complete, far-reaching, and intense as possible. This subsidiary tendency seems to refer more especially to the "administrative" or "organization" aspects of the combination problem. It deals with the methods of organization best suited to the realization of the common aim of all forms of combination, viz. the elimination of mutual rivalry in favour of the common regulation of industry to the utmost degree possible. Thus its general operation may be observed throughout most of the forms of industrial combination.

A further tendency within the general movement towards industrial combination is one which, like the latter, seems to run right through or be inherent within the whole of the movement from the very nature of its operation. It indicates a phase of the combination tendency when it is estimated according to its ultimate aims

and its most effective and complete form. This tendency refers, of course, to the movement towards monopoly which is said to exist within every form of combination, in varying degrees according to varying cases. It reveals an essential feature of industrial combination, for, as Mr. Bolen says, the purpose for which most of the combinations have been organized is the acquirement of some degree of monopoly, if it is at all possible.[1] Without doubt, this represents an underlying feature of the combination movement, and the oft-alleged "tendency towards monopoly" will serve as a connecting thread which appears to run through every form and development of industrial combination. This is, of course, akin to the broad class of "monopolistic combinations" indicated earlier, and in estimating its operation, influence, and the intensity of its development, it will also be possible to estimate and indicate some of the circumstances which determine the possibility of establishing monopolistic combinations in English industry. For this is the ultimate standard by which one should estimate the development of the combination tendency. This inherent or general tendency develops in degree according as the circumstances of the various industries allow the central motives of industrial combination to be realized, viz. the elimination of competition and the joint regulation of industry.

The subsidiary lines of development mentioned above may serve to indicate some of the main directions in which the combination tendency has proceeded; although isolated for the purposes of investigation, they must not be considered wholly independent and individually apart. On the contrary, they are in most cases closely interwoven in actual practice. For, as has been frequently pointed out, nature has drawn no hard and sharp lines of division in the economic conditions of actual life.

Thus, these main lines of development appear as con-

[1] Bolen, *Trusts and the Tariff*, p. 3.

tinuous threads, interwoven with each other, running through and connecting the different spheres within which the combination tendency operates. In actual practice there are no rigid demarcations between these, each line of development, as indeed each form of organization which may be distinguished within the combination movement, tends gradually to approach the others. There is constant interweaving and interconnection through the broad action of the general tendency, and through the existence of common, fundamental motives and characteristics. Applying a phrase sometimes used, the different developments and formations exhibited within the combination tendency in English industry seem to be "the leading species of a large genus."

It will be seen later that these interweavings and relations are due to the fact that many common forces underlie and give rise to them, and also because the effects of their operation, their economic structures and functions, all present very many features of similarity.

Thus, an essential feature common to all the developments lies in the combined action of enterprises or capitals which formerly operated independently; so also the ultimate object in view in each case is the mutual regulation of industry so that it may become more and more profitable to those combining for this purpose. In like manner, the development of permanent combination often follows on as the natural outcome of temporary combination. Thus the formation of the amalgamations can be seen within the development of vertical combination, just as within that of horizontal combination. In fact, the vertical combinations are usually permanent in character, only in a few cases are temporary forms of vertical combination observed. On the other hand, horizontal combination has developed largely in the formation of temporary combinations, especially when the hybrid associations (which are closely akin to temporary combinations) are included. Moreover, the large horizontal amalgamations are compara-

tively recent in origin, and the vertical amalgamations are even more so.

Above all, it has been shown that the development of vertical combination tends strongly to intensify the necessity for, and also directly to prepare the way for that of horizontal combination in one of the three directions indicated. For when an industry is concentrated under the control of a few vertical combines, strong in resources and competing strength, the intensity of their rivalry must naturally call for some development of horizontal combination if only for the preservation of common interests. Again, in proportion as the competing units become fewer, the more practicable will it become for them to enter into horizontal combination; the advantages of union will also become most apparent under such circumstances.

This has been shown in the heavy steel trade, which has become concentrated in the hands of about half-a-dozen gigantic firms—largely the results of vertical combinations. There has now arisen a tendency towards horizontal combinations, *e. g.* Messrs. Cammell, Laird & Co., Ltd., and Messrs. John Brown & Co., Ltd. Similarly we find the development of vertical combination in this branch of industry followed by a horizontal development in the direction of temporary combination. For it is said that the firms in this branch of the iron and steel industries, all gigantic vertically organized enterprises, are in close touch with one another.

So, too, it will be seen later that some industrial combinations afford instances of the influence both of the horizontal and the vertical developments of combination.

Thus the several lines of development, though isolated temporarily for the purposes of investigation, must be constantly regarded as closely interwoven in actual practice. The predominance of either of them in any particular sphere of industry must be dependent upon the existence of certain circumstances not found elsewhere. From this point of view it is interesting to

inquire into the predominance of the vertical development in the iron and steel industries of England. But is this development rightly regarded as a separate, distinct, or co-ordinate line of development within the combination tendency generally, as has been assumed hitherto? Some writers appear to favour the contrary opinion, and therefore to underestimate its importance. The general trend of such arguments, in their strongest form, is that the whole influence of vertical combination is altogether contrary to the combination movement, and does not rank as an independent and co-ordinate method of combination. But vertical combinations in English industry exhibit peculiar and distinctive characteristics which hardly justify such sweeping assertions in all cases.

It seems clear that the underlying motives, the abnormal market conditions, and the depression resulting from the operation of competition, which directly occasion the horizontal development of combination, are not such as could lead to vertical combination. So also the organization of industry is not possible by a system of complete vertical organization—the ultimate aim of vertical combination in the fullest degree—though possible as a system of complete horizontal combinations. It must also be admitted that the vertical development can often be used as a means of defence or aggression against the horizontal combinations. But undue limitation of view often hides many of the forms under which industrial combination presents itself, and much depends upon the point of view taken. Vertical combination certainly is a part of the tactics and strategy of industrial warfare under the régime of combination. Moreover, as has been indicated, it is one expression of the efforts made by independent firms to rise above the varied operation of competition. Though the vertical development presents features different from those exhibited in the three directions along which horizontal combination has proceeded, it still involves many of the essential principles of industrial combination. It has the common

ultimate aim—the elimination of competitive friction and the regulation of some sphere of industry by a dominant, completely organized enterprise in place of a number of rivals in conflict at various points. It reveals a distinct aspect of the problem of the relations existing between competition and combination, and of the many consequences arising from the operation of competition.

As one result of its varied operation, the competitive system necessitates the utmost productive efficiency in a firm if it is to be a successful competitor in the struggle for trade.

In certain industries the productive efficiency, and therefore the competitive strength of the enterprises engaged in them, is greatly increased by the elimination of friction in the internal organization of production and distribution, and in the mutual bargaining carried on between units engaged at different, though connected, stages of production. This can only be attained by vertical combination, which endows one resultant unit with such powers of control that it can enter the lists with very fair chances of success.

The above represents the position which the operation of competition produces in the iron and steel industries, in particular, because of the modifying influence of certain technical conditions peculiar to these industries, as will be indicated later. Surely here, at any rate, vertical combination may be regarded as a co-ordinate and distinct development of the combination tendency, due to the operation of competition as modified by the conditions of these industries.

But from a general point of view the vertical development of combination certainly appears distinct and co-ordinate. Unity in the organization of an industry commanding a special market is generally recognized as a distinctive characteristic of an effective industrial combination. Without doubt this is a factor or motive underlying and influencing the formation of vertical combinations.

Just as with the horizontal combinations, it receives considerable impulse from the prospects or possibilities of realizing the savings and economies of combination.

The fact that the vertical development can be resorted to as a means of weakening or breaking the power of the horizontal combinations (*e. g.* a firm producing iron and steel seeks to combine vertically with a firm which utilizes them for the purpose of further manufacture, in order to resist horizontal combinations formed between consumers of steel—makers of tin-plates, galvanized sheeting, etc.), ought not to be used as an argument to show that it is not a separate, co-ordinate, or spontaneous development within the general combination movement. This seems merely a case of "setting a thief to catch a thief," since one form of combination can frequently be best thwarted by means of another. Even if it is resorted to as a resource against other developments, it does not necessarily differ in kind for this reason.

Competition operates in various ways, and various developments of combination may be resorted to in order to control its varied operation; largely on account of the modifying influence of the special conditions of various industries or firms—the remedy must be suited to the ill. Thus it will be found that where the utmost efficiency in production and centralized control of related branches of industry (carried on by different enterprises previously) becomes not only desirable, but essential for the successful management of an enterprise, the combinations resorted to usually fall within the vertical line of development.

Subsequent instances will show that this is the typical development of industrial combination in the iron and steel industries. Here, the modern conditions of industry and commerce and the general stress of the competitive system tend to compel independent firms, operating at different though connected stages of these industries, to become "co-operating links in an unbroken

chain of processes which turns the ore into merchantable steel,"[1] under the all-embracing control of a number of dominant units. A complete vertical organization has become essential in various branches of these industries for the utmost productive and competitive efficiency, and the development of vertical combination is a means of securing it available to all firms in most cases.

While the several firms co-operate under independent and individual managements for the production of commodities in the different connected branches of these industries, the competitive system tends to produce overlapping of demand and supply. It thus impedes the flow of the products through the different stages of production. Errors in forming estimates as to market conditions, failure or excess of supplies where the finished product of one firm constitutes the raw material of another, tend to have a demoralizing effect upon the industry generally, and impair the efficiency of the producing units. There is a lack of "adjustment" in the relations of the firms thus connected, which is intensified to a serious degree by the special circumstances peculiar to the iron and steel industries.

The development of vertical combination introduces a stable bond of union, established usually on the firm basis of an amalgamation of enterprises which has control of a wide range of processes. Such a firm is, therefore, a highly equipped and extremely effective competitor in the markets of many branches of these industries. Thus the development of vertical combination exhibits the essential characteristics of the combination tendency—the union of the many enterprises under one control, the merging of individuality and independence in the community, common control in the common interest, etc. As in every phase of the movement the vertical combinations usually have as an ultimate aim the securing of better prices, since the desire for trade control and market domination must soon press to the

[1] *Journal of the Iron and Steel Institute*, Vol. i, 1901, p. 163.

fore after the formation of any kind of industrial combination. Mutual regulation takes the place of mutual competition in the vertical combinations as in the others.

In an interesting comparison with the horizontal development of industrial combination, that of vertical combination seems to arise out of a more healthy and "normal" phase of the operation of competition. The former seems to arise mainly as a remedy against the abnormal conditions of the market, which direct competition of immediate rivals produces by depressing prices and dislocating industry and commerce generally. The latter development seems to arise more as a normal development to meet the "attendant" or inherent conditions of the competitive system, in so far as they necessitate the utmost efficiency in producing units if the latter are to be maintained successfully.

The horizontal development represents, in particular, an effort to rise above the operation of competition in the "external" or "market" relations of a number of producing units operating on the same level of industry and competing in the same markets. On the other hand, the vertical development of combination represents rather an effort to rise above the general operation of competition, as a factor which produces friction in the internal organization and mutual relations of enterprises engaged at different but connected stages of an industry. Thus a general survey of some of the characteristic features of vertical combination seems to point to the conclusion that it can be fairly considered as a co-ordinate and distinct line of development within the general tendency towards industrial combination in England. For it indicates a particular aspect of the relations between competition and combination as they are modified by the special circumstances of various branches of industry. Its relation to the horizontal development of combination, in either of the directions indicated, is of itself almost sufficient to justify such a conclusion. Both the horizontal and the vertical de-

velopments represent the efforts of independent rival firms to rise above the operation of the competitive system. Both horizontal and vertical combinations ultimately desire to secure a dominant position in their markets. The horizontal combination seeks to acquire this by the elimination of direct, mutual competition; the vertical combination secures it by the elimination of the friction and conflict which arise in the relations between independent firms engaged at connected processes of the same industries.

It is clear that the ultimate result in either case is the combination of formerly independent firms, and also that the original fundamental causes are to be found in the general and manifold operation of the competitive system. The substitution of combined action in the place of independent rivalry is the central motive underlying combination, horizontally or vertically. The control of industry by means of common action in order that it may become more profitable to the firms combined for this purpose is the final result aimed at in the case of either development. These represent the essential principles of industrial combination according to the definition adopted earlier. Therefore it seems possible to regard the vertical development as a co-ordinate and distinct method or development of combination.

Of course, the horizontal development of combination must constitute the most extensive form of industrial combination in every industry, since it is the development which is designed to eliminate direct competition. Even in the iron and steel industries, the horizontal development is probably more extensive and general than the vertical development. Yet the latter is the *characteristic* development of industrial combination in these industries. For although indications of its influence can be discerned in other industries, it is in the iron and steel industries that one can clearly see how it is a development of combination which has been largely "determined" by the special circumstances

peculiar to these industries. Thus it is from this standpoint that the causes underlying it and the conditions influencing its progress should be examined and estimated.

Of course, the three "directions" followed by the horizontal development indicate branch developments. Yet each appears to be sufficiently extensive and important to call for separate investigation; such temporary and, maybe, somewhat arbitrary isolation and analysis are likely to facilitate the investigation of their causes, and the conditions which determine their effectiveness.

The tendency towards centralization which is discernible within existing combinations may serve to indicate more clearly the position of industrial combination regarded as a form of business or industrial organization. The "tendency towards monopoly" which has been referred to, indicates an ultimate or possible tendency within every form or development of industrial combination, where it becomes effective.

How, then, has the development of vertical combinations become so noteworthy a feature of the iron and steel industries? What are the special circumstances of these industries which have contributed to produce this result? Any attempt to answer these questions must take into account a series of conditions peculiar to these industries.

Chapter III

THE DEVELOPMENT OF VERTICAL COMBINATION

ITS CHARACTER, CAUSES, AND DETERMINANT CONDITIONS

The operation of the competitive system, and the directions of development followed by the tendency towards industrial combination in the various English industries are profoundly influenced by the particular conditions of these industries; they undoubtedly constitute some of the main determinant conditions.

A general view of the position of the various industries, in their relation to the combination movement, reveals several striking features. Thus one notes that ever since 1885–8 a large number of attempts have been made to regulate competition, prices, and output, in the various branches of the iron and steel industries to a greater extent than in any other of the "main" industries. Further, these efforts have usually taken the form of temporary combinations until almost 1897–1900, when a development of permanent combination sets in. Yet, strangely enough, one finds comparatively few instances in which temporary combinations have been able to exercise a decisive, continuous, and permanent influence upon output and prices in branches of these industries. Of course, these temporary combinations are usually "horizontal" in character, comprising only the firms in particular branches.

On the other hand, although one comes across many instances of horizontal amalgamations of firms to eliminate their immediate rivalries and secure various advantages and economies, these are usually of less importance.

There is a comparative absence of instances of horizontal amalgamations which have been able to exercise any very considerable influence upon markets, in any particular branches of these industries, *as a result of amalgamation*. The clearest instance comes from the engineering branch engaged in the manufacture of locomotives; even here the enterprises possess special markets and favourable conditions. The horizontal amalgamations are, generally speaking, of secondary importance from the point of view of the resulting restriction or regulation of competition in these industries. Horizontal combination of a temporary character has been exhibited within them to a considerable degree (although its effectiveness has been limited to a comparatively small number of combinations) ever since the 'eighties.

On the contrary, it is noticed that the formation of permanent combinations in these industries has not become of any considerable importance until comparatively recent years.[1] Further, in some cases these amalgamations have been such that they have occupied a dominant position in certain branches of the industries. In such cases, almost without exception, they are *primarily the result of vertical combination*—the combination of firms engaged at different stages of these industries.

As compared with the position of industries other than those producing iron and steel, this feature is all the more striking. When an amalgamation occupies a dominant position in such industries, *e. g.* the Bleachers' Association, Ltd., the Bradford Dyers' Association, Ltd., the Fine Cotton Spinners' and Doublers' Association, Ltd., in the textiles; the Associated Portland Cement Manufacturers, Ltd., Messrs. Brunner Mond, Ltd., the Wallpaper Manufacturers, Ltd., etc.; they are almost invariably the result of the horizontal development of combination. Outside the iron and

[1] Cp. *British Iron Trade Association Reports*, 1902, p. 168, *passim*.

steel industries, the vertical development occupies a secondary position, comparatively, so far as permanent combination is concerned. So also, vertical combination has developed little in the direction of the formation of temporary or "hybrid" combinations. Even in the iron and steel trades, almost all the effective temporary combinations fall within the horizontal development. The influence of the vertical development under any form of organization can only be discerned in isolated and possible instances in the various main industries, other than those making iron and steel products. Several general conclusions seem quite permissible, viz. (1) the vertical development of combination is exhibited mainly in the iron and steel industries, and its influence in the other main industries is, comparatively, of secondary importance; (2) within the iron and steel industries the development of vertical combination usually appears under the form of permanent combination, and the important amalgamations in these industries, with a few exceptions, are the result of vertical combination; (3) the full and conscious development of these complete vertical amalgamations is, comparatively, quite a modern feature of the iron and steel industries; (4) the striking importance of the vertical development of industrial combination in the iron and steel industries must probably be due to some conditions peculiar to these industries.

The predominance of the horizontal development of combination throughout industry generally is clearly accounted for by the fact that *the* motive for the formation of industrial combinations is the desire to eliminate or restrict competition—direct and mutual—between enterprises in the same branch of industry. Similarly, the importance of the vertical development in the iron and steel industries, and its comparative absence in the other main industries, *can only be satisfactorily explained by reference to some special conditions peculiar to the iron and steel industries.* It has been indicated

how the vertical combinations merit investigation as a distinct and co-ordinate development of combination on general grounds; its increasing importance in the iron and steel industries lends additional support to this view, although its significance has sometimes been under-estimated. For although its character and progress are closely bound up with the general development and technical working of these industries, a temporary, if somewhat arbitrary, analysis will help to indicate its nature. The inquiry, therefore, seems to fall into two main sections: (*a*) the position of vertical combination in its relation to the modern development of these industries, and also (*b*) its relation to their general working conditions—more or less technical circumstances.

The iron and steel industries are peculiarly English industries. As Mr. Carnegie has pointed out, it is to Britain that we must come for the starting-point. . . . Great Britain soon became the first manufacturing country, and we note how individualistic the various organizations were that established the industries.[1]

Until the last quarter of the nineteenth century England was supreme and in many ways unrivalled for the manufacture of iron and steel products. The position had been attained very largely through the efforts of individuals—ironmasters, engineers, etc.—men like the Crawshays of Cyfartha, the Bells of Middlesbrough, Cort, Neilson, Cowper, Bessemer, Thomas, Gilchrist, Hadfields, and Siemens, men who largely made the iron and steel trades by individual and independent effort. The various organizations and manufacturing establishments were also intensely individualistic. Some were large, many were small, and each contributed in an independent or isolated fashion to establish and increase the general volume of the trade. This isolation of works and processes under the control of independent firms, numerous and varied in

[1] Cp. *Journal of the Iron and Steel Institute*, 1903, pp. 34, 35.

size and operating at isolated stages or branches, has constituted a characteristic feature of the English iron and steel industries from the point of view of structure and organization. Reference has frequently been made to its existence and retarding influence upon these industries in England as contrasted with those of U.S.A., for example.[1] Mine-owners obtained the ores and coal, and sold them with a profit to the blast furnace firms, who sometimes also had to purchase a supply of coke. Of course, blast furnace enterprises soon sought control of their own supply of raw materials. These were represented by the "ironmasters" who played such a prominent part in districts like Cleveland, South Wales, and Staffordshire. However, all blast furnace firms were not so fortunately situated. The pig-iron produced by the latter was utilized in the "puddling" furnaces for conversion into wrought iron; this was in turn taken over and manufactured into various classes of rolled products. With the early development of the steel manufacture, all the firms do not seem to have controlled all the processes right through from the production of pig-iron to the rolling of steel products.

The important point is that the organization or structure of these industries in England has been essentially individualistic—independent firms operating in isolated fashion in various branches, especially as regards the production of pig-iron, finished iron, or rolled steel products; and this organization has persisted in a most dogged manner up to recent years. Thus reference has been made to the satisfactory position of firms producing Bessemer pig-iron for the open market and largely dependent upon the agency of brokers; and also to the disadvantages of steel-making firms who have to look to the same intermediaries for their raw materials.[2] Reference was also made to the weakness of the English iron and steel industries as

[1] *Report of British Iron Trades Commission*, 1902.
[2] *Iron and Steel Institute Journals*, Vol. i, 1901, p. 163 (Mr. A. Sahlin).

regards competing strength and productive efficiency, which had arisen from the independent and isolated manner in which English firms were engaged in the various branches and at related stages of manufacture.[1]

Such methods and such an organization might do well so long as England held the leading position in almost all directions, and while the iron and steel industries of other countries were, comparatively, only in their infancy. But since the 'seventies the international position of the English iron and steel industries has been fundamentally altered, and naturally such a change has compelled alterations in the structure and organization of these industries within England, as regards both their national and local aspects. Above all, the changed circumstances of the iron and steel industries of England have necessitated great changes in the structure and organization of the producing units—the various firms. Of course, the altered position in relation to other countries is not the only circumstance which has necessitated changes in the structure and organization of the firms or of these industries. Yet it is probably one of the most important of such circumstances. There are many other conditions which all tend in the same direction, *e. g.* the new inventions and methods of production which have been applied, the development of new markets and new branches within the industries, and the altered conditions of industrial organization generally. These and other similar conditions have contributed to produce contrasts between the business and industrial organization of these industries in the past and in the present, scarcely less great than those between the pioneer and the modern manufacturing plants.[2] It is said that the long sway of the English iron and steel manufacturers tended to produce lethargy as regards the general methods of organization within these industries, however energetic individuals may have been as

[1] *Iron and Steel Institute Journals*, Vol. i, 1901, pp. 158–63.
[2] *Journal of the Iron and Steel Institute*, 1903, pp. 34, 35.

regards improvements in technical processes. It was the pressure of foreign competitors in markets which were formerly almost the sole preserves of English firms, and latterly even in the home market, that gave a special stimulus to English firms to devote attention to the structure and organization of the iron and steel industries of England. Since about 1895 strenuous efforts have been made to reorganize these English industries so as to meet modern conditions, and these efforts have also been very successful. The commercial element has tended to become quite as important as the mechanical element.[1]

It seems probable that one of the most important conditions influencing the English iron and steel industries at the present time is their position with regard to foreign competition, especially from Germany and America; but other factors are operative. Thus the whole economic environment of the manufacture of iron and steel products has been largely revolutionized in modern times through a variety of circumstances. The position has been generally summed up (1905) as follows: There have been periods when it was not regarded as much of an advantage to possess iron and coal mines and coking plants. . . . Of late years it has become increasingly important and recognized that the pig-iron maker is in a more desirable situation when he controls his supply of raw materials through the prerogatives of direct ownership . . .; where the steel manufacturer controls both his raw materials and his pig-iron supplies in the same way, his position is now theoretically ideal. . . . No longer must the blast furnace owner pay a profit to the mine owner, the colliery owner to the coke manufacturers; nor must the steel producer pay a profit to the maker of pig-iron, nor the rolling mill proprietor pay a profit to the steel producer who supplies his billets, bars, ingots, etc. Under the newest arrangements which regulate and

[1] *Journal of the Iron and Steel Institute*, 1903, p. 34.

control modern practice, the intermediate profits are treated as a final profit on the finished product . . . and the producer is thereby left in a better competitive position, and can produce more cheaply in times of stress, from whatever cause it may arise.[1] Dividing the English enterprises into two classes—those that pay good profits and those that pay small profits or none—it has been concluded that those in the former class largely owe their success to their command of the raw materials required for the manufacture of their final products; also that the antithesis of this leaves the firm involved in an unsatisfactory position.[2] The position of iron and steel enterprises in Germany and the United States is said to be much similar.

Some years ago considerable complaint was made as to the independent and isolated manner in which the firms were engaged in the various branches of the English iron and steel industries. It was predicted that unless they sensibly combined forces—each plant becoming a co-operating link in the unbroken chain of processes which turn the ore into merchantable steel—many would be driven to the wall.[3] Subsequent events have largely fulfiled this prediction. Modern conditions necessitate that the various processes in certain branches of the iron and steel industries should be carried on as far as possible under combined or concentrated management. This is especially necessary under the modern conditions of these industries in England. Mr. Andrew Carnegie has said of the manufacture of iron and steel that henceforth there can be only one profit made from ore to finished article, and in many branches of the industries this opinion seems to be unquestionably right. British manufacturers have now adapted their plants for centralized and economical production along these lines.[4] The British Iron Trade Commission also referred

[1] Cp. *The Iron Trade* (Jeans), pp. 174–6, *passim*.
[2] *Ibid.*, Chap. ix.
[3] *Journal of the Iron and Steel Institute*, 1901, pp. 158–63.
[4] *Ibid.*, p. 163.

to the need for the reorganization of the structure of the English iron and steel industries and the consolidation of interests, to which end efforts are being directed to a greater extent at the present time than has ever been the case before, and with very satisfactory results.[1]

The inquiry indicates that it is becoming increasingly recognized that the modern conditions of our iron and steel industries make it more and more essential that a producing firm should have control over the raw materials and processes requisite for the manufacture of its finished products. The former organization of these industries, when various firms operated in isolated fashion at various stages, independent as regards management yet mutually dependent as regards the supplies of materials, can no longer secure the utmost productive efficiency and competitive strength which modern conditions necessitate, particularly as regards the heavier products. In the branches manufacturing these it is highly desirable, if not most essential, that the modern firms should possess a complete vertical organization of production—be self-contained or self-sufficient for the manufacture of their products. Thus the firm making steel rails should possess its own plant for producing and converting pig-iron into steel ingots. It should control all subsidiary processes and supplies of raw materials "through the prerogatives of direct ownership." It is quite clear that this represents the characteristic feature of the modern trend in the organization and structure of the iron and steel industries both in England and abroad.

But it is necessary to inquire more closely how far the movement in this direction has proceeded in England, what are the special causes which have given rise to it, and the circumstances which have determined its development. It is also necessary to indicate the methods by which English firms have sought to secure

[1] Cp. *Reports of the British Iron Trade Commission*, 1902, pp. 565–9, and *passim*.

this complete vertical organization of production. This will make it possible more easily to estimate the position of vertical combination from the point of view of the development and also from that of the general working of the industries.

Previous to about 1875, England really supplied the world with every kind of iron and steel products—Belgium was our effective competitor; since 1875 the position has been completely changed. During recent years the average annual imports of iron and steel into England are considerable, while in foreign markets the competition of other countries, especially that of U.S.A. and Germany, is very keen. The virtual monopoly of colonial markets which English firms formerly enjoyed has been greatly limited, and the home market has become subject to attack as regards certain classes of products. For many years Great Britain was the largest producer of iron ores, pig-iron, and finished iron products. Since 1890 she has yielded first place to U.S.A., and since 1897 second place to Germany. In 1870 Great Britain produced over 50 per cent. of the total output of the world, by 1903 she produced approximately 20 per cent., Germany 25½ per cent., U.S.A. 42 per cent.[1]

However, one noteworthy fact is quite certain: as the output of finished iron has declined in England, the production of steel has increased. In 1860 the annual output of steel was less than 100,000 tons; in 1875 the output of finished iron was 2¾ million tons, and the output of steel was under 1,000,000 tons. By 1904 the output of steel was over 5,000,000 tons, and of finished iron well under 1,000,000 tons. The relative increase in the output of steel and decline in that of finished iron has continued up to the present as a very distinctive characteristic of the industries.[2]

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[1] Cp. *The Statistical Abstract; The Iron Trade* (J. S. Jeans), p. 10, and *passim*.

[2] *The Iron Trade* (J. S. Jeans).

Again, it should be noted that the international position of England has become somewhat unfavourable for the production of steel generally, relative to other countries. In 1886 England occupied the first place, in 1887 she gave place to U.S.A., and about 1902 to Germany also.

There is a varied supply of statistics which all point to the same conclusion, viz. that very great changes have taken place in the "national" position of the English iron and steel industries, relative to those of other countries.

Moreover, independent firms producing pig-iron and finished iron for various markets in independent and isolated fashion have been rapidly disappearing. This is especially evident by means of reference to particular districts in England. In Cleveland the output of finished iron was about 900,000 tons in 1883, and a little over 100,000 tons in 1904. More striking still is the case of South Wales and South Staffordshire. The latter district was once the flourishing centre of the extensive finished iron manufacture. It produced over 1,000,000 tons per annum, from over 1000 furnaces. This output has now declined to about 200,000 tons per annum, from about 250 furnaces. At present, the finished iron works frequently roll steel ingots into sheets, wire, hoops, etc. In South Wales also the finished iron manufacture has been rapidly decreasing; in several works it has been given up, whereas it was formerly their chief activity. The total number of independent plants making finished iron goods have now declined to a few hundreds. In South Wales there are very few finished iron puddling furnaces left standing, whereas they once numbered about 500, and constituted one of the most flourishing branches of the iron and steel industries.

Doubtless the substitution of steel for iron for various purposes has largely tended to produce this result. But other conditions have also influenced the movement.

The competition of other countries in the home, colonial, and foreign markets is said to be most severe as regards three classes of products of branches of the iron and steel industries, viz. (1) pig-iron, (2) semi-finished materials, rolled iron, steel ingots, bars, billets, blooms, etc., (3) finished hardware goods and machinery. Largely on account of these circumstances it is found that the branches producing these products have largely changed in organization and structure; and the English iron and steel industries generally have tended to develop most in other special directions, particularly those in which foreign competition exercises least influence, and home, colonial, and foreign markets are most considerable. The manufacture of iron and steel in England has really tended to become "specialized" for the manufacture of certain classes of products, as, for example, (*a*) finished plates, angles and girders for shipbuilding, boilers, bridges, etc.; (*b*) sheet steel, galvanized and corrugated sheets, tin-plates, etc.; (*c*) the manufacture of finished rolled products—rails, bars, girders, sleepers, etc.; (*d*) the various classes of heavy steel goods, as castings, armour-plate, armaments and forgings; (*e*) the production of steel tubes, machinery, and general engineering products of various kinds, and specialized Sheffield and Birmingham lines; (*f*) the construction of vessels of every kind.

Statistics and reports show that in these specialized branches of production Great Britain has not only maintained her relative position, but has established it more securely, *e. g.* the British demand for shipbuilding material, plates, angles, etc., is greater than that of any country. The average annual output is more than that of U.S.A. and Germany together, while the export trade is also very considerable. The average annual export of railway materials also compares favourably with that of any other country. In the manufacture of heavy steel goods and shipbuilding Great Britain is easily supreme. The position of Sheffield, the centre of the

heavy steel trade, and that of the Clyde and Tyne yards afford sufficient evidence.

An interesting reflection of the situation is seen in the specialization which has arisen as between the various districts, *e. g.* the Sheffield district manufactures heavy steel goods; South Wales, above all, produces pig-iron, rolled steel products, and tin-plates; the Glasgow district and the North-east Coast districts are the centres for the manufacture of ship plates and boiler plates, rolled products, for general engineering and shipbuilding. Of course, this distinction must not be pressed too far, since no district confines itself to a few branches of production alone.

The foregoing review has necessarily been somewhat general, but it may help to show some of the main directions in which the British iron and steel industries have developed in modern times, from a national point of view. It constitutes a necessary preliminary to any satisfactory estimate of the position of the firms, the producing units, and the relation of their structure and organization to the vertical development of combination. However, it seems to confirm the conclusions indicated already. It has been stated that the best paying works are usually those that have made a feature of specialities that are not too keenly competed for, and for which special plant is required. But when such firms are examined, it is found that in almost every case they have not only specialized, but have specialized on the sure basis of a complete vertical organization of production, rising from raw materials to the finished products. Such firms control the whole range of processes antecedent or auxiliary to the manufacture of their final products; the whole organization has been founded upon the possession of privileged supplies of raw materials—ores, coal, coke, limestone, etc.

It is the firms which are thus situated that are among the best paying enterprises; in fact, they are the leading and most typical of the modern organizations of the

English iron and steel industries. The struggling independent blast furnace firms manufacturing pig-iron for general markets are being weeded out. In some cases the process is nearly completed, *e. g.* in South Wales; in others it is still in progress—the depression through which many pig-iron firms have passed is significant. Unless they possess some privileged markets or special supplies of raw materials, they must either drop out or else advance to higher stages of manufacture —steel goods of some kind.

More so with regard to firms making finished iron goods, since this market is now less wide, owing to the substitution of steel products. As has been seen, the independent works making finished iron goods in an isolated fashion have been gradually decreasing in number.

The total output of finished iron in the United Kingdom is now below what the Midlands alone produced in the eighties. The firms making only a few classes of rolled steel goods from purchased supplies of steel are also being gradually eliminated.

The prevailing tendency in the iron and steel industries is for large units to acquire control of a complete vertical organization of production over a wide range of processes, especially as regards rolled products. In fact, modern conditions are fast tending to make this essential for success as regards productive efficiency and competing strength. So also is it becoming desirable and necessary that this complete vertical organization should be developed in the direction of specialization in certain branches of manufacture.

The capacity of an iron or steel manufacturing plant to yield profits of greater or less amount is said to depend primarily upon its command of cheap raw materials. It is generally agreed that where a firm controls its own supply of raw materials and the whole range of processes necessary for the manufacture of its final products, its position is ideal in view of modern conditions in these

industries. It is also said that the cheapest pig-iron producer is in the long run the master of the market for rolled iron and steel products as well.

The above general characteristics in the development of these industries seem to have an important bearing upon the position of vertical combination within them. Of course, they do not comprise an exhaustive list, but they are sufficient to indicate what certainly appears to be a predominant tendency within the English iron and steel industries. It is particularly evident when the methods are examined by which some of the leading firms within them are seeking to consolidate and improve their position.

A few typical instances of actual firms which have acquired this specialized and complete vertical organization will not only help to give point to the inquiry, but also to bring out the position of vertical combination as a method adopted to secure this organization; *e.g.*—

The firm of Messrs. Bolckow, Vaughan & Co., Ltd., of Middlesbrough, was established in 1850 for the manufacture of pig-iron by smelting local supplies of ore, and for a long time this was its chief activity. However, under the pressure of modern conditions it was compelled to extend its range of activities in order to secure a market for its pig-iron by becoming a steel producer. The requisite capital and resources were available, and the firm has so extended its position and activities that it is now self-contained for the manufacture of pig-iron, cast iron, and many classes of rolled iron and steel products.

The Ebbw Vale Steel, Iron and Coal Co., Ltd., is another good instance. Originally, this firm was established for the production of pig-iron and finished iron, steel, and for mining coal. It controlled large supplies of iron ore, coal, and limestone, and took a prominent part in the production of finished iron goods by means of the puddling furnaces; this was at the time when this

trade was so flourishing in South Wales. This firm also developed the production of rolled steel products by the Bessemer process. But when modern conditions necessitated that it should advance to the production of steel under the best conditions, it dismantled its old plant, and set about the task of becoming self-sufficient for the production of rolled steel goods of all kinds under the best conditions. Fresh supplies of iron ore were acquired from Spain and Norway, existing limestone quarries and coal properties were developed, and complete control was secured over all the necessary plant and processes. The management expressed their determination to develop their resources to the utmost and at all costs in order to secure a complete vertical organization. It has been said that this determined policy of self-development was the only means of securing the productive efficiency and competing strength, which would enable the firm to hold its own against foreign competition and modern conditions. Its position is now thoroughly established, the efficiency and condition of its plant, and the nature of its products afford ample testimony to the correctness of its policy. It controls all the materials and processes necessary for making many classes of rolled iron and steel goods, pig-iron, castings, etc. It makes much of its own plant, controls ore supplies in Spain and Norway, and arranges for their transportation to the works at Ebbw Vale. There are abundant supplies of limestone and coal in close proximity to the iron and steel plant. This firm thus produces its own coal and coke, quarries its own limestone, and even makes its own firebricks from its own clays. It is also largely endowed with estate rights, so that it is self-sufficient as regards land for extensions, dwellings for employees, supply of water, etc. It affords an excellent instance of a complete vertical organization which has been developed continuously and successfully to meet modern conditions. It has recently extended its activities still further, by entering the market as manu-

facturer of certain engineering products, as castings, and also of small rolled products.

In order to steady its production of rolled steel products by providing a constant outlet for them, the firm has now erected a very extensive modern plant for the production of corrugated, galvanized sheets. For this seems essential in order to complete its vertical organization so as to make it possible to meet the pressure of modern conditions in its branch of industry, particularly as regards competitive conditions. Estimating the position according to the trend of events, this would appear both the right and the natural policy.

An unique instance is probably the firm of Palmer's Shipbuilding and Iron Co., Ltd., of Hebburn-on-Tyne, which was originally established to carry on shipbuilding work in 1851, and has extended as "the result of a definite purpose controlling the whole—the guiding principle being that of making the works self-contained, and to meet the growing needs of the times." Its self-development has been so remarkable that it now possesses a complete vertical organization for the construction of the largest war-vessel. It controls the intermediate processes necessary for the manufacture of castings, forgings, galvanized sheets, boilers, engineering products, rolled iron and steel products, pig-iron, etc., all based upon the possession of its own supplies of raw materials.[1]

Again, many of the firms in the tin-plate industry of South Wales were originally established as manufacturers of tin-plate from boughten supplies of steel bars. Under the pressure of modern conditions, and in order to become fully efficient, these firms found it desirable to become steel makers and produce their own semi-finished steel products. In order to do this successfully they extended their activities so as to control the requisite raw materials.

[1] Cp. *History and Description of the Works of Palmer's Shipbuilding and Iron Co., Ltd.*

Similarly, Messrs. John Lysaght, Ltd., of Bristol, famous for the manufacture of galvanized sheets, have found it necessary to secure greater control over their raw materials and markets. Some years ago this involved the migration of their Black Sheet Rolling Mills from Staffordshire to Newport, Mon., where the supplies of raw material would be more accessible. Quite recently this firm has put down blast furnaces and steel plant at Scunthorpe, in Lincolnshire, with a view to improving its position still more in these respects.

These are only a few typical instances, but they serve to show how firms engaged in the iron and steel industries have been developing their powers so as to control a complete vertical organization of production.

However, it can be seen that this method of developing such a complete organization—through the "progressive self-realization" of one firm, without definite and deliberate combination with other units operating in different but connected branches of the industries—is available or applicable only under certain conditions. It is found where a firm, right from its establishment, possesses "inherently," so to speak, the resources or materials available for a future policy of development. Firms which have developed and expanded in this manner are usually those which have always had control over the supplies of raw materials, coal, ores, limestone, etc., and have been conveniently situated for development. When occasion required it they could the more easily extend their activities, and consolidate the whole organization upon the basis of their control over raw materials and necessary processes, "through the prerogatives of direct ownership." When a firm possesses some such base of operations it can extend and consolidate its own activities with comparatively little difficulty. However, in the case of firms which were established at intermediate or isolated stages of manufacture (*e. g.* for the utilization of boughten pig-iron or steel ingots

for the manufacture of semi-finished products ready for higher stages of production), it would not always be possible for it to develop a complete vertical organization out of its own resources. In most cases ore, limestone, or coal properties have already been taken possession of, or could only be obtained at prohibitive cost. The extension of activities by the establishment of new works is by no means practicable in every case. The site of a firm may not be convenient, or may be too restricted by the surroundings to allow for extensions. Good sites may be difficult to secure, the position and reputation of existing firms could prove a barrier to success. Or, again, capital may be lacking to meet the enormous outlay required to establish afresh blast-furnace works, collieries, mines, etc., or to go forward to erect new works for more advanced processes. The question of existing and potential competition must be faced, the effects of new enterprises upon the market must be considered before vast quantities of capital can be expended in a fixed form. This was shown in the case of several large enterprises.[1]

Comparatively few firms in England have possessed the potentialities or the possibility of developing, independently and unaided, a complete vertical organization out of their own inherent resources. As may be seen from the above survey, the history and development of the industries have been against it. Resources and latent possibilities cannot well be realized, nor can activities be extended unless a firm has been so situated that it possessed these possibilities "inherently," so to speak. Thus the firm of Messrs. Palmer & Co., of Hebburn-on-Tyne, has always been favoured with an admirable site on the seaboard, and conveniently situated with regard to its supplies of raw material. So also the

[1] "It was decided that to lay down new works for the purpose of extending processes and acquiring a natural complement of activities would involve needless expense, and arrangements were made for taking on with some other works which had already acquired reputation."—Supplement to *The Sheffield Daily Telegraph*, January 28, 1911, p. 17, and *passim*.

Ebbw Vale Steel, Iron, and Coal Co. has always possessed privileged supplies of raw materials convenient for transport, capital, and sites for extensions. Messrs. Bolckow, Vaughan & Co. were established in the midst of vast deposits of ores and coal, and favourably situated as to conditions of production and distribution. Messrs. John Lysaght, Ltd., possessed many potentialities which offered a nucleus for further developments. In such cases as these, various conditions have been eminently favourable for the extension and consolidation of activities under the guidance of an enterprising directorate; when the "base of operations" is already established the position is much more favourable and advantageous.

But comparatively few firms have been thus endowed. As a historical survey indicates, many of the firms seem to have been originally established to operate independently at isolated stages of iron and steel manufacture. There were blast-furnace firms producing pig-iron, puddling-furnaces producing finished wrought iron from boughten supplies of pig-iron, and firms rolling steel goods from boughten ingots. Even where a firm possessed its own supplies of raw materials, circumstances might be against the extension of its activities by the independent development of its own resources in order to meet the requirements of modern conditions.

Thus Messrs. John Brown & Co., Ltd., of Sheffield, is a firm which has always been self-contained for the manufacture of rolled and heavy steel products. As the history of this firm shows, those guiding its development "sought to safeguard a cheap and unfailing supply of the raw materials required by the purchase of extensive iron-ore mines in Spain, Lincolnshire and Northamptonshire, and several collieries within a few miles of the great Sheffield works . . ." soon after their establishment.[1] However, it was realized by 1890 "that economy of production and continuity of employment

[1] Supplement to *The Sheffield Daily Telegraph*, January 28, 1911, p. 20.

for their huge plant could only be conserved by acquiring still further undertakings." [1] Since the larger part of their productions consisted of armour-plate, marine shafting, marine forgings, castings, and heavy steel materials generally, it was evident that the acquisition of a shipbuilding works alone could maintain the demand for these productions. It was not practicable to establish the new works, since the requisite facilities were not easily available. The position of existing shipbuilders, the vast capital required, the market standing and the experience necessary made this a difficult course of action, but the Clydebank Engineering and Shipbuilding Company, the famous shipbuilding company established in 1873, had won a world-wide reputation for excellence. Every facility for efficient production was available, but it is said that the firm was realizing the weakness of being dependent upon other firms for its supply of materials. The payment of intermediate profits upon the latter, and the loss of collateral profits, tended to increase the costs of production, and sometimes to endanger its productive efficiency and competing strength. Naturally, a vertical alliance was mutually desirable and highly advantageous to this firm and John Brown & Co. Thus the resulting amalgamation secured a complete vertical organization for general shipbuilding and engineering, and for the production of various classes of heavy iron and steel, right from the extraction of raw materials to the construction of finished vessels.

It is said that shortly afterwards it became evident that an increased control over the manufacture of ordnance and projectiles was doubly desirable in order to save intermediate and collateral products. To this end an arrangement was made in 1903 whereby the firm became closely connected with Messrs. Thomas Firth & Sons, Ltd., of Sheffield, one of the finest firms in the world for the manufacture of ordnance and projectiles. At the present time Messrs. John Brown & Co. are in a

[1] Supplement to *The Sheffield Daily Telegraph*, January 28, 1911, p. 20.

WORKS COMPRISED BY JOHN BROWN & CO., LTD., AND CONTROLLED DIRECTLY BY THEM THROUGH THE COMBINATION OF ALLIED INTERESTS. ANALYSIS OF ITS ORGANIZATION:—

Iron Ore Mines,
Spain, Lincs. and Northants.
Yorkshire Collieries, nr. Sheffield.
Limestone Quarries.

Coking Plant,
Blast Furnaces
for
Production
of
Pig-iron, and
Purified Iron
at
Atlas Works,
Sheffield.

The conversion of Iron into Steel Ingots.

Mills for producing almost every class of rolled steel and heavy steel goods.
Armour Plate
Castings,
Forgings,
Ship-plates,
Angles,
Marine materials
of every description.

Norfolk and Tinsley Works, **Sheffield,** for making Ordnance and Projectiles.

Coventry Ordnance Works, Ltd.

Naval Gun Mounting Works, Glasgow.

Ammunition Works, Rochester.

Clydebank Engineering and Shipbuilding Works.

Large interests in Harland and Wolff, Belfast, Shipbuilders and Engineers.

Construction of **War Vessels complete** in every department also of every class of vessel without dependence upon any other firm.

Production of every class of Railway Material—Axles, Tyres, Springs, Buffers, Rails, etc., etc.
Highest grade steel for tools, etc.
Machinery of various kinds.

position to build and equip throughout, without the assistance of outside firms, the largest battleship or the fastest liner. Some of the finest vessels afloat, men-of-war, liners, and merchantmen, afford an eloquent testimony to its efficiency, whilst its plant and financial standing indicates the soundness of its general position. This is only one instance from the heavy steel industry which is typical of the development of firms which have helped to make this English industry famous. It furnishes some of the best illustrations of the necessity for, and the peculiar advantages arising from, that most marked feature of the modern iron and steel industries —viz. "the co-ordination and consolidation of large interests." (See previous page.)

The development of Messrs. Cammell, Laird, Ltd., is much similar to that of John Brown & Co., Ltd. Established in 1837, Messrs. Cammell & Co. became self-contained for the production of various classes of rolled iron and steel goods, and heavy steel products. In 1903 it united with Laird Bros., Ltd., shipbuilders and engineers of Birkenhead. This was the natural complement of the undertakings carried on by Messrs. Cammell & Co. The vertical combination in 1903 was made in accordance with the law that where progress ends retrogression begins. Having brought to the highest stage of efficiency the vast works for the manufacture of armour-plate, ordnance, heavy steel, etc., it became evident that the continuity of full employment could only be assured by allying them with the construction of vessels for which their products were destined.

Messrs. Laird & Co. welcomed the union since it gave them the control over their materials, so necessary for modern efficiency, enabled them to save intermediate profits, and construct any vessel, complete, at the minimum of cost and time.[1]

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[1] Cp. Supplement to *The Sheffield Daily Telegraph*, January 28, 1911, p. 18.

Other instances are those of firms like Hadfield's Steel Foundry, Ltd., Vickers, Sons & Maxim, Ltd., which illustrate the tendency towards the extension of activities and the acquisition of a complete vertical organization of production in these branches of the iron and steel industries.[1]

In the above case it will be noted that the method adopted to attain this end does not consist in the "self-development" of one firm; this method is not available or applicable. Here the complete vertical organization has resulted from the definite and deliberate combination —vertically—of firms engaged at different, though connected, branches of the industries. This method expressly represents the development of vertical combination, which is deliberately utilized to unite the resources of a number of firms engaged at the various "complementary" stages of the industry, and is so clearly exhibited within the iron and steel industries. It represents a combination that has been definitely negotiated and established between the firms which it comprises. Thus one firm may desire to extend its activities or secure its markets; another may seek to obtain control over its supplies of raw material, and thus secure its position for efficiency in production and distribution. These firms do not compete with each other directly in their markets, thus the immediate motive of combination is not the elimination of direct competition. It is rather the motive underlying the development of vertical combination, which eliminates the friction of mutual bargaining between firms engaged upon different levels of industry, and concentrates in one dominant unit full control over a complete range of processes and production.

Thus there certainly appears every justification for regarding vertical combination as a distinct and co-

[1] Cp. Supplement to *The Sheffield Daily Telegraph*, January 28, 1911, pp. 18–22.

ordinate development of the combination tendency at least within the iron and steel industries. It represents a very extensive development, since it is the only method available to most firms by which they can conform to "that most marked tendency of the modern iron and steel industries."

Typical instances taken from other branches of these industries point to the same conclusion, some good cases being available from South Wales. There is the firm of Messrs. Guest, Keen & Nettlefold, Ltd., which has acquired a complete vertical organization for a wide range of productions as the result of vertical combinations. Guest, Keen & Co. was a vertical combination formed between Messrs. Guest & Co., Ltd., the Dowlais Iron Co., Ltd., and the Patent Nut and Bolt Co., Ltd. The two former companies furnished the supplies of raw material—iron ore, coal, coke, limestone—and plant for rolling the iron and steel bars required by the other company for making its various products. It is said that the first two firms sought to secure a constant market for their products, and also to extend their activities. In 1902 Messrs. Guest, Keen & Co. sought to acquire a still wider sphere of activity by means of vertical union with Messrs. Nettlefold, the world-famed screw makers. This firm welcomed the union as a means of securing their own supply of raw materials, and of absorbing intermediate and collateral profits. The subsequent inclusion of Messrs. Crawshay of Merthyr brought additional supplies of coal, iron, limestone, and steel into the combination.

The financial success of Messrs. Guest, Keen & Nettlefold, the remarkable extension of the firm, and the efficiency of its plant, afford striking testimony to the effectiveness in production and competition of a complete vertical organization for the manufacture of a wide range of iron and steel products.

The following analysis of its structure is typical of the organization of such firms where a complete vertical

organization of production has been secured by means of vertical combination:—

Iron Ore Mines.
Coal Mines.
Coke-producing Plant.
Limestone Quarries.
Supplies of Water, and Land for Extensions, etc.

Transport facilities for bringing materials to their works, and conveying products from the same.

Blast furnaces for smelting iron ore and for producing pig-iron for foundry purposes, cast iron, and conversion into steel.

Plant for converting iron into steel by means of Bessemer and open-hearth processes at Dowlais and Cardiff.

Rolling mills for producing various classes of small rolled products.

Rolled steel products of the principal classes —rails, bars, blooms, billets, plates, sleepers, etc.

Nuts, bolts, railway material, and screws of every variety.

This firm also sells supplies of coal, coke, pig-iron, etc., in the open market.

Another good instance is that of a well-known firm in South Wales, Messrs. Baldwins, Ltd., who, in 1902, formed a combination with several firms who were engaged as customers in finishing their half-manufactured productions. By this combination the producers of the raw material, from iron ore and coal and the converting of them into half-manufactured material, secured a steady output of such manufactures, without which, had they been left to sell such in the open market without interested combination, they would have been most seriously hampered by the notorious dumping of foreign half-finished material in competition with themselves. This combination not only enabled the producers of the half-finished materials to retain their market, but secured that portion of the combination which delivered the finished article to the market. There is a variety of instances which illustrate this general tendency,[1] and

[1] Cp. *The Trust Movement in British Industry* (Macrosty), Chaps. ii–iii.

also some of the motives underlying the vertical combinations in the iron and steel industry.

Generally speaking, almost every branch of the iron and steel industries is being influenced by this "tendency towards the concentration, co-ordination, and consolidation of interests and processes." As will be seen later, some branches have been influenced more than others on account of special circumstances, but none seem to have escaped its operation. Even in the South Wales tin-plate industry—where the enterprises are so small, and the organization of the industry so strongly "individualistic" or "isolated"—this development of complete vertical organizations has made its appearance. In the case of Baldwins, Ltd., the method appears to have been that of deliberate vertical combination; in other firms the method has been rather that of "self-development," or expansion. Not so long ago the tin-plate firms were almost invariably "pure"—making tin-plates from boughten steel ingots, bars, etc. At present, the "mixed" works are becoming a noteworthy feature of the industry—tin-plate firms making tin-plate from their own supplies of steel bars.[1] In 1906 Lord Glantawe referred to circumstances which had "brought into existence a condition of things which might well press out of the trade the tin-plate maker who was not also the maker of his own steel, and might eventually place it in the hands of tin-plate makers who also had steel-works, and steel-makers who had controlling interests in tin-plate works."[2]

Such a reference is of twofold importance. First, it shows that steel-makers have been extending their interests, activities, and organization vertically in order to secure their markets; and also that tin-plate makers have been seeking to consolidate their position by placing it on the firm basis of control over their supplies of raw

[1] One manufacturer estimated the savings of tin-plate firms making their own steel bars as over 10s. per ton.

[2] *The Times*, September 19, 1906.

material, and by saving and absorbing intermediate and collateral profits. Either conclusion furnishes evidence as to the tendency towards the development of a complete vertical organization in the South Wales tin-plate trade, of all trades. The present tendencies which are discernible and the available statistics show that the above prediction is also likely to be fulfilled. Time was when the tin-plate works were invariably "pure," now a large number are established as tin-plate, iron, and steel manufacturers. Since 1900 this is especially the case, for the open-hearth steel process has facilitated the production of suitable steel from pig-iron, scrap iron and steel without the more extensive plant required for the Bessemer process. During the last decade the open-hearth process has made great progress in South Wales, enabling tin-plate firms more easily to complete their vertical organization by producing their own steel. Thus it is not surprising that steel producers are seeking a "controlling interest in tin-plate firms" to secure their markets with firms that are among their best customers, and are setting up tin-plate and galvanized sheet works of their own. In any event, the net result must be to increase the general tendency towards the development of a complete vertical organization of production.

Other branches of the iron and steel industries must be considered later in this connection, but general inquiry appears sufficient to establish several conclusions: (1) That there is a "marked tendency in the iron and steel industries towards the co-ordination, concentration, and consolidation of interests." The various producing units are seeking to develop a "complete vertical organization of production" in various "specialized" branches, from the provision of raw materials to the making of finished products. (2) That there seem to be at least two different methods of acquiring this vertical organization. (*a*) The one method became evident earlier than the other, and is more involved with the evolution or historical development of the industries;

this may be seen from a review of the more modern development of the industries. This method represents the "self-development," or the progressive expansion, "forwards" or "backwards," of a firm from its own reserves of strength.

(*b*) The second method, which is applicable more generally, and which is, as the instances indicate, of more recent origin, answers more strictly to the meaning implied by the term vertical "combination." For it consists of the contraction, or deliberate combination of a number of firms—previously operating independently at connected stages of the industries—so as to establish one dominant unit controlling a complete vertical organization of production and an extensive range of processes and products. This method of formation definitely terminates an antecedent period of bargaining friction between the combining firms. It might almost be termed the "artificial" method mutually resorted to by producing units in order to meet the modern conditions of these industries. On the other hand, the former method might be termed the "natural" or "inherent" method by which the enterprises conform to these conditions.

What, then, is the relation between these two methods of attaining the same end—a complete vertical organization of production throughout certain branches of these industries? What is the real significance of the fact that the producing units seem to be directing their efforts towards this same end, although by different methods or along different directions according to their varying circumstances? The ultimate aim is certainly the same in every case—control over the whole range of processes requisite for the production of certain products—*e. g.* heavy steel and rolled iron and steel products, shipbuilding and engineering work, tin-plates, tubes, screws, etc.

It is seen already that they present many points of resemblance, and the differences between them must not

be allowed wholly to obscure these features of similarity. Both methods have the same end in view, and both produce substantially the same effects upon the industries, their organization, structure, and methods. They bear practically the same relation to the conditions of production, distribution, and price regulation (allowing, of course, for differences which arise on account of the varying degrees in which they may be realized). Each method, in its own way, is directed towards the acquisition of the same ultimate form of organization; each is a part of the same general tendency which is operative within these industries, and also within industry generally. In short, the features of resemblance are those connected with the *resultant structures*, the points of difference refer to the origin and the historical *process of formation* of the respective organizations.

The first method—that of progressive expansion or self-development—does not necessarily involve any reference to an antecedent period of direct competition, when the different processes were controlled by a number of independent firms. The complete vertical organization represents a structure attained by the expansion of one firm; there is not necessarily any question of the definite and deliberate vertical combination of a number of firms. On the contrary, in the second method the resultant and ultimate organization is acquired expressly by the combination of a number of firms previously operating independently at connected stages of these industries, and conducting their mutual bargainings on competitive principles. This method definitely involves the contraction of a number of firms into one dominant unit, and corresponds with the strict implication conveyed by the terms industrial combination, and vertical combination, as previously defined.

But from the point of view of organization, economic effects and functions, the resultant structure is the same in both cases—a structure which involves the common control of one organization over a number of parts that

might, in cases of necessity, operate independently, though, of course, with less efficiency.

Thus it is seen that the more liberal interpretation of the definition of industrial combination indicated earlier viz.—as applying to the resulting structures and not strictly or solely limited to the process of formation—really applies to both methods in principle. Both may also fall within the terms of the definition of vertical combination, which is, of course, one phase or development of the general tendency towards industrial combination. The essential principles of industrial combination seem to apply right through, although in varying degree and with various modifications.

Moreover, as was seen earlier, both methods of acquiring a complete vertical organization (*i. e.* both "methods" of vertical combination) are bound up with the general development of the iron and steel industries under modern conditions. While they can be temporarily isolated for the purposes of investigation, it is very difficult always to separate them in actual practice.

Thus it is frequently found that firms which afford good instances of the methods of attaining a complete vertical organization of production by means of expansion or self-development, also secured additional strength at some time in their history by absorbing or combining with firms engaged at related industries; so also in cases where a dominant producing unit possesses a complete vertical organization of production, mainly or almost entirely as a result of deliberate combination vertically with other firms, throughout its development constant attention has been given to the full utilization of its inherent resources. In fact, it would seem that in the case of a number of firms engaged at different yet related processes, enterprising and strongly placed firms might absorb or take into combination other less fortunately situated firms; or by sheer expansion or increase of resources it might force the others out of their position and render itself largely independent. The inter-

weavings between these two methods by which the complete vertical organization is ultimately obtained are of the utmost importance in firms in actual practice.

Distinctions possible in a theoretical analysis are likely to become unsatisfactory if pressed too far without reference to practical conditions. Nowhere is this more the case than in the present connection. Many instances are available which show the need for the more liberal interpretation of the definition of industrial combination, at any rate as far as its application to the vertical development is concerned. Instances are available which show that rigid cleavage between the two methods of procedure or development is not always possible in actual practice. Some degree of self-expansion is almost inevitable or essential; some element of deliberate vertical combination must arise when circumstances are favourable. Thus for the present general inquiry both methods may be considered as methods of vertical combination, generally and liberally defined.

Thus far, the relation of vertical combination to the history of modern development of the iron and steel industries has alone been considered. The factors underlying the desire, and also the necessity for a complete vertical organization of production in various branches of these industries cannot be fully estimated without reference to its relation to their general working conditions, and to the actual modern circumstances of the industries. Will not such an inquiry also indicate the motives underlying either "method" of vertical combination, interpreted liberally as above?

For a further conclusion certainly seems justified—that there is both a desire and a necessity for complete vertical organization in some of the chief branches of the iron and steel industries, in order that the conditions of production and distribution may become all the more favourable. The importance of vertical combination in these industries arises or increases according to the strength of this desire and the pressure of this necessity;

these are usually intense on account of the special and peculiar circumstances influencing the manufacture of iron and steel products, especially those of the heavier and more bulky class.

The general motive underlying every method or form of vertical combination is the desire of producing units to ensure the acquisition of self-sufficiency in their various branches of production. Under modern conditions, fullest efficiency in production and competition can usually be attained only where producers can rely upon their control over raw materials and necessary processes.

However, "self-sufficiency" like "competition" or "excessive competition," is not a self-explaining term; it involves a whole series of considerations. In its most general application to the iron and steel industries a producing unit may be said to possess this attribute or power, when it has concentrated under its direct control all the processes of production, in the particular branches with which it is concerned, from the provision of the raw materials to the sale of the finished products. Thus a firm producing pig-iron is self-sufficient when it controls its own supplies of raw materials—ores, coal, coke, limestone, etc. A firm producing finished iron must, in addition, control its blast furnaces and raw material supplies in order to possess self-sufficiency. A firm producing rolled steel products is self-sufficient when it controls its supply of raw materials, blast furnaces for smelting them, and Bessemer or open-hearth converting plant for producing the steel ingots to be rolled into rails, bars, and more finished products.

The term self-sufficiency must therefore be applied with reference to the particular branches or stages of the industries at which a firm is engaged. The self-sufficient firm must then control all the materials and also the processes antecedent or auxiliary to the manufacture of its most finished or final products.

As was seen, fewer and fewer firms now stop with

the production of pig-iron, or of finished rolled iron products. The general review of the development of the iron and steel industries shows that the predominant tendency is for large firms to carry on the production of pig-iron, rolled iron and steel goods concurrently. The exceptions are those of smaller firms in certain general branches, or firms situated in special circumstances, with special markets and conditions of production. The dominant prevailing tendency which must be taken into account is for firms engaged at the various different, yet connected, stages to become "co-operating links in an unbroken chain of processes which turns the iron into merchantable steel."[1] Thus it comes about that the term "self-sufficiency" can generally be applied to mean self-sufficiency for the manufacture of steel products of some kind. This necessarily carries with it the further meaning of self-sufficiency for the production of finished iron goods, pig-iron, and any products of the antecedent and auxiliary processes.

This represents the self-sufficiency aimed at by vertical combinations in the iron and steel industries. The desire for the acquisition of this power is a general motive which is operating beneath the surface in every case.

It would be well to indicate here another possible conclusion which somewhat modifies the application of this term. A brief review of the general development of the English iron and steel industries under modern conditions seemed to justify the conclusion that there is a strong tendency towards specialization at work within them. Firms or groups of firms are tending to specialize in certain branches for the production of certain classes of products, *e. g.* heavy steel, engineering and shipbuilding, rolled steel products, tubes, plates and sheets of various classes, tin-plates, etc. This arises largely according to the local, physical, or economic conditions which have influenced their development. Thus

[1] *Journal of Iron and Steel Institute*, 1901, pp. 159–63.

it is also found that producing units are tending to become, above all, self-sufficient for certain specialized branches of production.

This places some modification upon the application of the term self-sufficiency, and also upon the development of vertical combination as a means of attaining this power. For it seems that partly for this reason the development of complete vertical organizations of production has tended to become "incomplete," or "specialized," in England, in its national aspect, as compared, for example, with the position in U.S.A. This is a feature which must be more fully indicated later. However, keeping in view the most general application of the term, how has the desire and the necessity for the establishment of the large self-sufficient unit arisen, from the point of view of the general working and the more or less technical conditions of the iron and steel industries in modern times? This can only be satisfactorily estimated by an analysis of some of the actual circumstances of certain branches of these industries, and the influence of the self-sufficiency of a firm in such branches of production, taken in conjunction with these circumstances. By this means some of the causes underlying the development of vertical combination will become more evident. As a commencement, reference will be made, in particular, to the production of the various classes of iron and rolled steel products.

Speaking generally, there seem to be three sets of circumstances or considerations which make it more advantageous for a firm engaged in these industries to be self-contained in its branch of production, if it is to compete most successfully with its various rivals. These sets of circumstances might be termed "*market*" considerations, "*process*" considerations, and "*producing*" considerations. The first set of circumstances of these industries, arbitrarily and temporarily isolated, are those which arise out of the general market conditions

of the iron and steel trades. These are influenced by general trade conditions, and also by the particular trade cycles of the various industries for which the iron and steel industries furnish requisites, machinery, etc.

As has been shown, the factors which determine iron and steel prices are particularly insusceptible of control. The inherent and almost normal tendency towards fluctuation and instability of prices is intensified by special circumstances, such as the vast amount of fixed capital used, the keen competition of German and American firms, who try to exploit the system of Free Trade in England. The result of these circumstances is that the market conditions of these industries tend to exercise an extremely important influence upon the policy, organization, and development of the firms engaged within them.

The set of "process" considerations are those which arise out of the nature of the technical processes of manufacture through which the iron ore passes before it is finally converted into steel products, as castings, forgings, rails, bars, ingots, plates, rods, girders, sheets, etc. This class of circumstances, therefore, represents conditions peculiar to these industries in their various stages. Of course, the circumstances of the practical processes in the most advanced stages, *e. g.* engineering, hardware, shipbuilding, etc., are too technical and extensive to be considered in detail within the present inquiry. Only the class of products which are "finished" at the rolling stages will be examined as regards their processes of manufacture, but they will suffice to indicate the general tendency and the principles operative even more strongly in the more advanced branches of iron and steel manufacture.

The "market" considerations exercise their influence upon policy and organization mainly through their effects upon the selling prices of the various products. The set of "process" circumstances influence more the costs of production, and through this medium exercise a

powerful influence upon the policy, organization, and development of the various producing firms.

The third set of circumstances are those termed "producing" circumstances. The *process* considerations arise out of the actual manufacturing processes of the industries; they are in a sense "internal" circumstances of the industries. The *market* considerations deal rather with the conditions in many ways "external" to the processes of manufacture, and outside the technical scope of the firms. The "producing" circumstances seem to occupy an intermediate position, and relate more to special methods of management or policy for carrying on the production of iron and steel products with a maximum of continuity, output, and success generally. They are methods which are greatly influenced by the joint operation of the "market" and the "process" considerations, regarded as being combined for practical purposes and the functions of management. They are the "management" considerations, which take account of the influence of the market upon selling prices and distribution generally, and also that of the organization of production and manufacturing processes upon costs of production; thus they determine the general policy and organization of the firms to a very considerable extent.

The joint operation of these three "sets" of circumstances seems to tend more and more towards making it a very important condition that firms engaged in these industries should be self-sufficient in their branches of production. Though isolated temporarily and for the purposes of inquiry, it must be emphasized that they are extremely interwoven and connected in actual practice. However, the development of complete vertical organizations of production in various branches of these industries, more especially by means of vertical combinations, can be largely traced to their mutual action and reaction under modern conditions generally.

(1) First, then, come the "market" considerations.

The prime object of every firm, in the iron and steel industries as in any other industry, is to make profits, and profits as large as possible. To a very considerable extent profits depend upon selling prices. Thus the development, organization, or policy which seem likely to have a favourable effect on prices, and thence upon profits, are those which are likely to be adopted. It has been proved by many firms that a complete vertical organization of production produces a decided increase of competing strength, and tends considerably to mitigate the effects of the notorious instability of the iron and steel markets as regards general prices. Thus the tendency towards the formation of vertical combinations in the iron and steel trades has received a considerable impulse on this account.

It is certain that there is no industry which is more liable to sudden and extraordinary fluctuations of prices and profits than are the iron and steel industries. Statistics are available which show that this general proposition applies to these industries in various countries.

In England, the modern "inherent" tendency towards market fluctuations in the iron and steel trades has been intensified and aggravated by various circumstances. It has been said of them that the difficulty is to guard against these fluctuations in prices and profits. The thought uppermost in the mind of every iron and steel manufacturer, persistently and necessarily, is that as to the future of prices. "But the trade is to a large extent a gamble in at least this respect—that no man can tell what a day may bring forth. The history of prices in the iron and steel trade has yet to be written. No Tooke has hitherto appeared to undertake such a herculean labour." [1]

Statistics show some extraordinary fluctuations of prices from year to year, and month to month; these fluctuations also occur over a very wide range. It is

[1] *The Iron Trade*, 128, and *passim*.

clear that prices in the iron and steel markets naturally fluctuate constantly in sympathy with general trade conditions. Moreover, coal may be "the bread of industry"—the *pain noir*—but iron and steel furnish the muscles for every branch of industry, even for the extraction of coal. Most industries demand iron and steel for plant, machinery, etc.; the strength of this demand varies with the prosperity of the various industries. Thus it comes about that the demand for iron and steel fluctuates with the trade conditions of particular industries. In addition, iron and steel products are universal needs, they are produced on a very large scale, and are all the more liable to wide and frequent trade fluctuations. These conditions only aggravate the inevitable difficulties produced by the normal variations of the general trade cycle. In addition, the raw materials required for the manufacture of iron and steel products are very considerable in quantity, and liable to considerable fluctuation as to their supply prices. This is especially the case with coal, which is "extremely and peculiarly liable to fluctuation." [1] It requires from one and a half to two tons of coal in order to smelt one ton of pig-iron; the bulk of our home consumption of coal for industrial purposes is accounted for by the iron and steel industries—*e. g.* in 1892 it was given as equal to any two of the other industries.[2] The fluctuations in the prices of the chief raw materials tend to aggravate fluctuations in the prices and profits secured in the iron and steel trades.

Again, large outlays of fixed capital are necessary for carrying on these industries, and it is a well established fact that price fluctuations tend to be most frequent and severe in industries wherein such investments are required. In the iron and steel trades they are practically "inextricable," and in times of over-production and depression firms struggle to continue producing in order

[1] *Some Notes on the Coal Trade, etc.* (D. A. Thomas), pp. 9–10.
[2] *Economic Journal*, Vol. iii. pp. 646–7; also *Miners and the Eight Hours' Movement* (C. M. Percy), pp. 30–31.

to keep down the heavy standing charges. This tends to aggravate the depression and the fluctuations which may occur normally. It is very surprising to find how long iron and steel manufacture may be carried on by firms without making any distribution of profits on their ordinary stock, or a satisfactory return on any investments. Thus it comes about that the iron and steel markets, almost normally, are extremely sensitive and liable to fluctuation. This feature has been frequently referred to. Thus it has been said that, particularly in unsettled times, the offer of several thousands of tons of pig-iron or steel in markets like Glasgow or Middlesborough at a few shillings below current prices would completely demoralize the market and almost create a panic.[1] It should be noted that this is also said to be partly the result of the policy of "warrants" in the iron trade. These circumstances and the rapid fluctuations of prices are clearly seen when one follows the course of prices.

Another influence which intensifies and aggravates the tendency towards instability of prices in these industries is that referred to by a witness before the Tariff Commission—viz. the operations of middlemen, which result in disturbing the market. "The extreme fluctuation to which the iron and steel markets have been subject seems to be due largely to the fact that middlemen, whenever there comes an increased demand, fear there is going to be a scarcity, and so call for more than they really need. In order to meet this apparent demand and check it, the output is increased and prices are raised beyond what would otherwise be justified. When at length it is found that there has been an oversupply made ready for the market, prices begin to fall, and these same middlemen, fearing they will be caught with too large stocks in hand, cut prices until they fall below what the market conditions would justify." [2]

Frequent reference is made to the extensive opera-

[1] Cp. *British Industries* (Ashley), p. 35.
[2] *Tariff Commission Reports*, Vol. i, § 128.

tions of middlemen in the iron and steel trades in a manner not to be discerned in other industries; this only aggravates the disturbances which normally occur in prices. As will be seen, the development of vertical combination produces just the organization which tends to eliminate the middlemen, and concentrates the business of production and distribution more under the control of dominant enterprises.

There are various other circumstances which intensify the almost normal instability of the markets for iron and steel products.[1]

It has been said that there is no industry carried on in the world that is more liable to be affected by foreign competition than that of iron and steel manufacture in England. In the absence of protective tariffs in England, foreign firms, especially the powerful firms of U.S.A. and Germany, try to take the opportunity of exploiting our position for their own advantage as occasion suits. Admitting that "dumping" may not always be unprofitable to some home firms (for instance, as regards semi-finished products), yet the very fact that such strongly organized producers are constantly at our gates or hovering around our borders, ready to exploit any favourable turn in prices, may tend at times to have an unsettling effect upon the English iron and steel markets. This may be especially so when prices generally are of themselves tending in a downward direction.

It is generally recognized that of recent years the keen competition of American firms with their vast outputs, and that of German firms with their joint export organizations, exercise considerable influence upon the conditions in the English markets for iron and steel.[2] In some directions, *e. g.* the markets for pig-iron and semi-finished materials, this is especially the case.

The above may serve to indicate some of the factors which influence prices in the iron and steel markets

[1] *British Industries* (Ashley), pp. 27–31.
[2] *Report of British Iron Trade Commission to U.S.A.* (1902), *passim.*

tending to make them very liable to fluctuation and very difficult to control. It has been found that horizontal combinations are the less effective on this account. A complete horizontal union of all the English pig-iron or finished-iron producers might be ineffective if only on account of the influence of foreign competition even in the home markets. For they are said to be "the most vulnerable in the world," in which "the action of foreign competition might at any time cause demoralization of prices and everything else—quite apart from economic conditions of the industries in other respects." [1] The available statistics relating to iron and steel imports and exports have an interesting bearing in this connection. Even in the United States and Germany horizontal combination has not been found an altogether satisfactory means of regulating prices in the iron and steel industries under all conditions. In England, the development of vertical combination seems to offer a means of minimizing or of mitigating to some degree the harmful effects of the vagaries of the iron and steel markets. This seems to present at least one interpretation of the present movement towards the development of large, self-sufficient combines in these industries, in so far as it is connected with "market" considerations.

How, then, does the complete vertical organization exert the influence here indicated?

It seems clear that since the self-sufficient firm controls all the raw materials and processes requisite for the manufacture of its products, there will be neither friction nor break in its internal organization of production or in that of distribution. This must increase its productive efficiency and also its competing strength in any market. It will be strong enough to command the respect of competitors and count as a force in the markets at home or abroad. Unity is strength, and strength must produce influence and some control over a definite portion of the market. When trade is

[1] *British Industries* (Ashley), pp. 27–31.

depressed, its resources will enable it to stand the stress better than a small firm which only produces for one market and is largely dependent upon other "co-operating" firms for its continuous operation. The heavy fixed charges will have less serious effects, since they will be spread over a greater area—a larger amount of capital. Trade also always tends to gravitate to the best equipped and best situated firms; these are most likely to be the firms with the complete vertical organizations, and which are, in consequence, the dominant units in the market. Moreover, firms which operate at the lower or intermediate stages of these industries are able to secure their market by vertical combination "forwards" with firms operating at higher stages; the latter firms, in turn, probably welcome such combination, since it strengthens a defective link in their chain of production and secures their supply of raw materials.

But the great power of the self-sufficient firm in respect of market control lies in the fact that it controls a wide range of processes and products, and has an extensive sphere of activity. Unlike the independent firm which operates at one stage only, or a few stages at most, the firm with the complete vertical organization can enter the iron and steel markets at various points, according to the corresponding course of prices. It can alter the directions of its activity according to the variations in the contemporary market conditions. Thus, in addition to being able better to withstand general depression and take the greatest advantages of general trade prosperity, the self-sufficient firm can mitigate the effects of "sectional" or "branch" depressions, and exploit any "sectional" improvements in the iron and steel markets as they occur.

In view of the instability, sensitiveness, and rapid price fluctuations which occur in these markets, it is not surprising that the development of vertical combination should be resorted to as a possible remedy. Take the case of a firm which produces only pig-iron, or only

rolled iron products. Variations in market conditions, price fluctuations, are felt directly by such a firm and cannot be easily avoided. Similarly, in the case of a steel-manufacturing firm which produces only a few classes of steel products. Even so, it must always carry much idle plant, *e. g.* in the absence of standardization a rolling mill firm must always have a large number of rolls, mostly idle, for rolling different sizes. A few large firms are in a better position to enforce standardization, and so score.

Again, where a firm is self-contained for the manufacture of a wide range of steel products, when the demand falls off for certain classes of its products, it can direct its energies to the production of the other kinds of steel goods. For it is found that "sectional" depression tends to occur more frequently than a general depression in all branches of the iron and steel industries. And, as has been shown, even in times of general depression the firm with the complete vertical organization is in the best position to withstand such periods.

Thus, from the important point of view of financial position and profit-earning capacity, the self-sufficient firm ensures greater security of investment. The manufacture of iron and steel goods, of any character, necessitates the outlay of heavy investments of capital in a fixed form. This heavy investment of fixed capital increases the burden of "fixed" or "standing charges" when trade is depressed, and also increases the necessity of securing the continuous operation of the plant laid down.

By becoming self-sufficient and securing a wide sphere of operations the firm is able to keep productive a larger mass of capital, which would frequently be endangered or unproductive if it rested on a narrow basis of manufacture, comprising only a few branches of production. Thus the direct shock of the instability of the markets for iron and steel goods can be avoided; at least, the effects of rapid fluctuations of prices and

periods of depression can be minimized, through their incidence being distributed over a larger amount of capital which has many methods of employment open to it.

The self-sufficient firm is in a better position to exploit the various market conditions, entering the market as pig-iron producers at one time and as finished iron or steel manufacturers at another time; or, when the iron and steel markets are favourable, it can engage in producing for them both. With its wide range of products, it has a number of resources available in order to ease the loss and dislocation which the fluctuations and instability of market conditions occasion for the small "dependent" firms, operating at isolated stages of the industries.

The above may serve to illustrate in some measure the causes for the development of vertical combination in so far as they relate to "market" considerations.

The fact that "profits fluctuate with prices, and even in greater ratio," and also that the outgoings of the employer are very considerable when trade is bad, especially if he is using much borrowed capital, aggravates still more the unsatisfactory position of the enterprises that have a narrow range of activities. It has been said that one of the greatest wants of the iron and steel trade, both at home and abroad, is an influence or method whereby prices may be steadied and violent fluctuations of production and prices obviated. Generally speaking, horizontal combination has not proved a satisfactory solution of such a difficult situation, for only under special circumstances does it prove really effective.[1]

The development of large self-contained firms, specializing in certain branches of production and controlling a wide range of processes, has now come to be recognized as a very practicable and effective method of meeting the influence of "market" considerations

[1] *Report of the British Iron Trade Commission*, 1902, Vol. i, § vii, pp. 183–193.

in these industries. The gradual elimination of the small firms, the extending activities of the large firms, their financial resources and general position, afford practical testimony to the strength and effectiveness of the development of vertical combination. Such units are more likely to be able to eliminate unnecessary middlemen, command some portion of the available trade, and struggle more successfully with competitors. When trade is depressed they can better withstand losses, and can mitigate the influence of wide and rapid fluctuations to a considerable degree. In short, it seems an application to industry of the homely advice not to carry all the eggs in the same basket.

(2) What, then, is the relation of the "process" considerations to the development of vertical combination in these industries? As was indicated, this set of circumstances refers to the actual methods of manufacture through which the ores pass until the finished steel products are ready for use. In every branch of industry the general working conditions largely determine the line of development followed by the combination tendency within it. The necessity for and the advantages of self-sufficiency and a complete vertical organization of production for a firm producing iron and steel arise from the central fact that the isolation of certain branches of production, as between different firms, involves the interruption of processes and consequent loss of heat and extra expenditure. Heat is the form of energy which is most widely utilized and vitally important in most branches of these industries. The costs of producing this heat-energy are very considerable. When the processes are carried through continuously there is comparatively little loss of heat, and the costs of production are at a minimum. When firms operate independently at isolated stages, there is a great loss of energy while the semi-finished products are being transferred from one process to another. This is not only wasted, but has to be made up by the firms which resume the processes in their turn. This waste

and the extra costs have an unfavourable effect upon the costs of production, and thence upon competing strength and profits. When a firm has concentrated under its direct control the whole range of necessary processes, it is able to utilize the heat-energy to the utmost advantage. It can save and absorb the intermediate costs, and thus increase its productive efficiency and competing strength in any market.

These technical conditions of production are really peculiar to the iron and steel trades, and have given a special impulse towards the development of vertical combination, particularly for the production of pig-iron and rolled iron and steel goods. Such conditions are not found in other industries; *e. g.* there is not such a waste of energy when cotton yarns pass from spinning to weaving firms, woven fabrics from weaving to bleaching or printing firms, or woollen yarns from spinning to weaving firms, and cloths from weaving to dyeing firms, etc. It is true that considerable intermediate and collateral profits might be saved by one firm controlling these processes, theoretically, but in practice the technical conditions, the specialized and differentiated nature of the operations go to make this less profitable, even if it were practicable.

The iron and steel industries really seem to stand alone as regards the vitally important relation of the "process" conditions to a complete vertical organization of production; thence is due in part the special development of vertical combination within them.

As was indicated, the media through which the "market" circumstances exercised their influence were mainly the selling prices and the methods and conditions governing distribution. The "process" circumstances bear more relation to the work of production, particularly the costs of production. And in the modern iron and steel firms the costs of production have come to be considered an element of vital importance as regards the success of a firm. Since selling prices are so insusceptible of control, attention has been more and more

concentrated upon the question of costs of production. Thus in the administrative organization of the firms it is found that the "Costs Department" is usually one of the most important departments. The costs sheets, showing the costs for the smallest items or factors of production, are scrutinized by the management weekly, and sometimes even daily. The importance of a complete vertical organization of production, and thence of vertical combination, in this connection can only be fully seen by reference to actual practice.

Take, for example, the production of rolled steel products. The order of the practical processes is briefly:— The ores, coal, coke, limestone, and other raw materials have first to be "assembled." When the firm has its own sources of supply it is able to save and absorb the intermediate profits which would otherwise go to the firms from which the raw materials would have to be purchased. If the firm has its own coking plant for converting the coal supplies into coke, there are a number of profitable by-products which can be secured. As the technical development of the industries show, these are becoming a means of deriving considerable profit. Even the heat produced in the blast furnaces is utilized through the waste gases being used for heating the blast, and more recently to drive engines for the blowing and other plant. When the ores have been smelted and the molten iron run into moulds and cooled it is termed pig-iron, and where blast-furnace firms stop at this stage the pig-iron is ready for sale. But in the self-contained steel-making firm controlling these earlier processes, the necessary amounts of iron can be conveyed direct, in a molten state and with trifling loss of heat, to the plant where it is "converted" into steel.

But when the steel manufacturing firm has to buy its supplies of pig-iron, usually through the medium of brokers, it must not only pay the costs of producing this iron, plus the profits of the smelting firm, and sometimes plus the profits of middlemen, but must incur the further costs of re-smelting the pig iron ready

for the process of conversion into steel. Re-smelting costs are also said to be very heavy in proportion to smelting costs. The latter sometimes average 30 per cent. more than the former. To these extra costs must be added the freight charges for transporting the supply of pig-iron to re-smelting or converting plant. Besides, the supply of boughten iron is not always of a reliable or suitable quality (*e. g.* there may be too much or too little carbon or silicon, etc., for the grade of steel required); this will tend to increase the costs of converting it into steel. Again, the supply may not be regularly available, and a hitch occurs in the working of the dependant steel-making firm, whose iron supply is subject to the vagaries of the iron market.

It is possible that the use of the "open hearth" process of converting iron into steel may facilitate matters in this connection for firms purchasing supplies of materials for manufacturing steel. However, it is said that even then the prices paid for raw materials, and more especially for coal and pig-iron, may sometimes render the course of manufacture anything but smooth for the firms dependent on others for their supply of raw materials.

These extra costs are avoided by the steel-making firm, self-contained for its supply of raw materials, etc. It is free from the fluctuations in the prices of ores, coal, coke, and pig-iron, and from irregularities or difficulties in securing its supplies. The profits of middlemen are largely saved and absorbed, there are no extra costs for resmelting, while it can effect economies by ensuring that the iron supply is of the exact quality that can be most economically converted into the grade of steel required. This is a technical point of increasing importance, since different buyers require different qualities of steel, and the laboratory is strongly tending to become the hub of the iron and steel manufacturing processes. Moreover, there is not only a minimum of cost, but also of time, which is very important where heavy contracts are required on short notice, or employees are paid high time wages; the plant can thus be run to the

fullest advantage. The savings on the costs of production and the increased efficiency of the self-contained firm in production and distribution are seen to be considerable so far, and tend to increase in greater proportion as the processes become more advanced.

After the iron is converted into steel, the next processes are for moulding the steel into ingots, which are to be passed through different sets of rolls, according as the finished products are to be rails, plates, bars, or girders, etc. Now where the firm is self-contained, the molten steel can be cast into ingots which can be passed on directly, red-hot and with trifling loss of heat, to the rolling processes. There is no loss of heat-energy, and the most economical methods are followed.

But where a firm produces rolled steel products from boughten steel ingots, it has to pay the costs of production of the ingots, plus the profits of the producing firms, the costs for transport and for re-heating the cold ingots before rolling them in the mill, and sometimes the profits of middlemen also.

These extra charges will not affect the all-important total of the costs of production very favourably. Also, any hitch or irregularity in supply, together with fluctuations in prices, will always be in danger of impairing the productive efficiency of the dependent firms operating in this isolated manner and thence their competing strength.

The self-sufficient firm can avoid these unnecessary costs and absorb the intermediate profits, and prevent the possible interruptions of production.

Modern engineering skill furnishes it with many other means of economising. The importance of such possibilities can be seen in the attention which has been devoted to the question of the "Utilization of Waste Heat," especially in the self-sufficient firms.

In almost every branch of industry it has been realized that success in competition and the marketing of products depends almost directly upon success and efficiency in production. The more efficient and cheaper

the methods of production become, the greater is the power of the producing unit. But efficiency and economy in production can be greatly increased by the utilization of all the resources and by-products of an enterprise to the fullest degree. Thus many firms are now deriving considerable revenue from the sale or utilization of by-products; whereas formerly these were practically thrown away as so much "waste" products. The application of scientific principles has accounted largely for this in many industries. In the iron and steel industries modern engineering skill creates some of the greatest opportunities for the economizing of the forces of production; this is particularly the case where the firm manufacturing the iron and steel products is self-sufficient or self-contained.

A unique instance is the Ebbw Vale Steel, Iron, and Coal Co., Ltd., which is erecting an up-to-date colliery plant to be worked by electricity generated from the waste gases of their blast-furnaces. A large portion of the general machinery in their iron and steel works, including a modern galvanized sheet works, and general lighting, already obtain their supply of electricity mainly from the same source.

The following report of a Conference held under the auspices of the Iron and Steel Institute indicates some interesting features in this connection—

Two papers which were made the subject of a joint debate treated of subjects which are arousing the keenest interest at the present time in manufacturing quarters. The first of these, by Mr. D. Selby Bigge, referred in detail to the developments which have taken place during recent years in the production of electric power and the application and bearing of these developments upon the iron and steel industries. In this paper the author pays particular attention to the possibilities, by the adoption of electric power, of lessening the cost of production. It must be admitted at the outset that progress in this country has been extremely slow, and, as the author correctly points out, the British steel-

maker has quite failed to keep pace with the extraordinary enterprise and activity displayed by American and Continental manufacturers and engineers. The economic conditions in some of our older works are stigmatized as deplorable, and it is asserted that if we are to continue to hold our own as a great productive nation more enterprise will have to be exhibited and closer attention paid to the rapid improvements in productive methods which are being so constantly effected by our competitors.

Use of Waste Heat and Gas

Latterly, it is admitted, in the iron and steel industries at any rate, considerable attention has been given to the newer methods whereby the cost of production can be reduced. It has been shown that electric power can be produced at a very low cost in the iron and steel works having at their disposal waste gas, waste heat, and waste steam, and the advent of the mixed pressure turbine has enabled exhaust steam to be fully utilized from engines which work only intermittently through the medium of a regenerative accumulator. The field for the application of such a system of power recovery is almost unlimited. Another method by which economies can be effected is by the installation of gas engines running on waste gases, and the Duke of Devonshire told the Conference that the eight gas engines put in operation at the Barrow works to replace steam engines previously employed have resulted in a saving in fuel representing £50,000 per annum. The waste energy of steel works may be utilized in several ways. At Barrow and Frodingham gas engines have been installed, and at Messrs. Bolckow, Vaughan's the waste heat has been employed in low-pressure turbines to generate electricity. At the works of Messrs. Samuelson the waste energy in the shape of exhaust steam has been sold to an electrical power company, while at the new works at Skinningrove the whole of the machinery is

to be driven electrically. Mr. Selby Bigge quotes costs of production of slightly over 0·2*d.* per unit, including interest and depreciation, and although these figures were challenged by Mr. Merz, who thinks the cost of production would probably be at least ½*d.* per unit, Mr. Selby Bigge's figures, quoted from actual records, were corroborated by Mr. W. C. Mountain, who showed from actual records that colliery companies in this country have been able to obtain power at a cost, including depreciation and interest, in one case as low as 0·146*d.* per unit and in another case 0·329*d.* per unit.

Electric Reversing Mills

With the advent of cheap electric power we shall see a considerable addition in this country to the number of electric reversing mills. The alleged superiority of the electric mill was not suffered, however, to pass unchallenged. Messrs. Sehmer and Drawe, of Saarbrücken, in a paper discussed jointly with that of Mr. Selby Bigge, dealt with the economy and design of modern reversing rolling mill steam engines. In this paper the authors pointed out that the comparisons of performances of steam and electrically driven mills were usually based in the case of steam-driven mills upon the records of engines of the most uneconomical type. With an engine working under modern conditions the cost of the steam used when rolling ingots to ten times the original length would not exceed 4·375*d.* per ton of material rolled, but this, it was stated by Mr. Ablett, who has devoted considerable attention to the subject of electric rolling-mill costs, would compare with 2*d.* per ton of material rolled in the electric mill on a basis of about 0·15*d.* per kilowatt hour for electric energy. Broadly speaking, the facts cited seem to point to the superiority of the electric rolling mill where waste energy can be utilized for the production of cheap

electric power. As to the particular system to be installed it is impossible to lay down any hard-and-fast rule. All the authorities appear to be agreed that each case must be decided on its own merits. (*The Manchester Guardian*, May 6, 1910.)

Thus it is found that some of these well-organized firms are using up the hot gases from their coke-making and furnace plant to generate steam power or electric power for driving their rolling mills, hot blast plant, and general machinery; their costs of production are considerably reduced thereby. The above inquiry may serve to show how some "process" circumstances influence the productive efficiency and the costs of production of the self-sufficient firm most favourably (and consequently its competing strength), even when it proceeds no further than the manufacture of rolled steel products. The ever-increasing necessity that such firms should be self-sufficient, and the advantages which are available, largely explain the development of vertical combinations to carry on such branches of iron and steel production by uniting a number of firms which previously operated only at isolated stages of these industries. Similarly, the above analysis applies to the cases of firms which adopt a policy of progressive self-expansion in order to secure a complete vertical organization of production.

In other cases where enterprises are engaged in production in the more advanced branches of these industries—for which rolled iron and steel products may constitute the raw materials or semi-finished products, *e. g.* ingots or billets for various heavier steel products, ship and boiler plates, shipbuilding materials, galvanized sheets, tubes and pipes, tin-plates, etc.—the necessity for self-sufficiency, and the advantages derived from it on account of "process" considerations, may apply even to a much greater degree as motives making for the development of complete vertical organizations by means of vertical combination.

Owing to the wider range of processes concerned, there is a proportionate increase possible in the advantages which may be derived from saving and securing intermediate and collateral profits. For all the intermediate savings available in the production of rolled steel products, and the economies possible in the further processes for which these form the raw material, constitute decided advantages. Among such are those derived from avoiding, and therefore saving, the profits of the firms that produce or the brokers who supply these rolled steel products, and also the saving of freights for bringing them to the more advanced works. Apart from the savings on the costs of production, self-sufficiency is all the more desirable on account of its relation to productive efficiency in these stages of manufacture.

For the establishment and operation of enterprises in these most advanced branches is likely to be attended with greater success and stability, when based upon the sure foundation of control over the sources of supply of the necessary semi-finished products and raw materials generally. In fact, the further a firm advances from this base, the more advantageous does it appear for it to secure its base and all the intermediate range of processes. It is like the case of an advancing army which must guard its lines of communication at all costs.

Firms which specialize in the production of the more finished products, as heavy steel, tin-plates, galvanized sheets, tubes, etc., present a number of vulnerable points unless they control to some extent the supply of the earlier or intermediate products. For fluctuations in prices with the vagaries of the markets for these different products, and the consequent or attendant irregularities of supply, might seriously endanger and dislocate the productive efficiency and competing strength of such enterprises. It is also a decided advantage for the one firm to possess a centralized control of final and intermediate processes.

The general analysis given above may serve to show

how far the development of vertical combination seems due to the important operation of the "process" considerations, in their relation to the costs of production, productive efficiency, and competing strength, secured in these industries by the complete vertical organization of the self-sufficient firm. What is the relation of the set of "producing" or "management" considerations to the development of vertical combination, as a means of acquiring the complete vertical organization so desirable in the iron and steel industries?

The considerations arbitrarily termed "producing circumstances" are those concerned with questions as to the successful management and the continuous running of enterprises in these industries. As has been indicated, they occupy an intermediate position, and are largely determined by the joint operation of both "market" and "process" circumstances in their relation to questions of practical management.

Some indications of their character have become evident already, *e. g.* the further an enterprise advances or specializes in the manufacture of iron and steel products, the more necessary does it appear for it to secure the ultimate "base of operations"—control of raw materials, and also the lines of communication—control of intermediate processes. While this is important as a "process" consideration influencing the costs of production, it is also necessary in order to secure, as far as possible, the position of the firm as a constant and successful producing unit under all conditions of the market. Otherwise, the course of manufacture of its products may be "anything but smooth."

When the supply of raw materials and semi-finished products cannot be depended upon at almost all times, production is ever liable to dislocation, and the maximum degree of continuity in production cannot always be ensured.

However, the central feature of this set of considerations seems to lie in the fact that when a firm can enter the market in various directions, when it has many

openings for its products or many methods of working them off, the management is enabled better to realize a policy of continuous production and employment of plant. Or, as it has been put in the case of a large heavy steel firm: Economy of production and continuity of full employment can best be conserved by union with connected undertakings.[1] The self-sufficient management may adopt a variable policy, suspend its activities in certain directions and increase them in others, according to the conditions of the trades, with a minimum of dislocation or suspension of production. Continuous running of the plant becomes more possible, and continuous production has a most favourable effect upon the costs of production, and consequently upon competing strength. This is shown by the following figures, taken from the books of a firm which can ensure this continuous running by means of vertical organization.[2] These figures go to show the savings in the production of steel from pig-iron, due to the increased output of steel, and also to the increased demand for pig-iron, as where a self-sufficient firm has several lines of activity in manufacturing steel products.

Year 19 –	*No. of tons finished*	*Wages per ton*	*Fuel per ton*
Week ending		£ s. d.	*Tons. cwt.*
February —th	2364	16 10½	2 0½
February —th	2222	17 6¾	2 0½

Decreased Production = 142 tons.
Increased cost in wages per ton = 8½*d.*
Average per ton = 17/2½ (wages), 2 tons ½ cwt. (fuel).

Week ending	*No. of tons finished*	*Wages per ton*	*Fuel per ton*
		s. d.	*Tons. cwt.*
March —th	3093	14 8	1 10
April —th	3105	14 2½	1 9¾

Average costs per ton = 14/5½ (wages), 1 ton 9⅞ cwt. (fuel).
Thus saving due to increased output was { 2/9¼ (wages) / 10⅝ cwt. (fuel) } per ton.
Add 10⅝ cwt. fuel at 4/- 2/2 per ton.
Add Stores and General Charges 1/- ,,
Total saving due to increase in output = 5/11¼ per ton.

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[1] Special Trade Supplement, *Sheffield Daily Telegraph*, January 28, 1911, p. 20.
[2] *Tariff Commission Reports*, Vol. i, table 15, paragraph 56.

Thus, in the instance quoted, the savings on the costs of production during the second period, when the works were running almost full time, as compared with the first period, when they were running about three-quarter time, amounted to practically 6*s*. a ton. In the case of this particular firm it meant a total saving of about £45,000 a year, the savings being effected on wages, fuel, and general standing charges.[1] Again, iron and steel manufacturers lay the greatest stress upon the importance of the continuous running of the works and a large output as a means of securing the most economical costs of production. The evidence shows that the policy adopted turns upon the comparative advantages of a firm in this respect.[2] One of the best methods of securing these ends is that of vertical combination, in view of the special circumstances of the English iron and steel industries.

A few more instances may be taken from the returns placed at the disposal of the Tariff Commission by various firms with regard to their costs of production; *e.g.* one manufacturer of steel goods states that the difference between the costs at full time working and half time working, reckoning the increases in coal, pig-iron, and other materials, depreciation, and all charges, amounted on "billets" to 15*s*. 6*d*. per ton, on "bars" to £1 2*s*. per ton, and on "plates" to £1 12*s*.[3] With a large firm such items of savings are extremely important. It is also seen how the importance increases as the product becomes more advanced or finished in nature.

Again, one firm produced 114,000 tons of steel at a cost per ton, under the existing conditions, of £4 15*s*. Selling this at an average price of £5 per ton, its profit equalled £28,500. Had their works been employed continuously and fully the cost per ton would have been reduced to £4 10*s*. Even had their extra

[1] Vide *Tariff Commission Reports*, Vol. i, table 15, § 56.
[2] *Ibid.* Vol. i, § 56–65.
[3] *Ibid.* § 56.

production of 38,000 tons been sold at cost price their profits would have been increased to £57,000, owing to the all-round reduction of costs of production.[1] Short time is said to be of infinitely more importance as a factor which increases the costs of production than all other causes put together.

In the first instance, the annual production averaged about 150,000 tons of steel. The importance of the continuous running secured by increasing the range of activities so as to call for a greater and more regular output of iron and steel can well be realized in other cases of firms with larger outputs, *e. g.* in gigantic vertical combines like the union of Messrs. Dorman, Long & Co. with Bell Brothers, Ltd. and the North-Eastern Steel Co.—self-contained producers of everything from iron ore to various rolled steel products, whose annual output reaches enormous averages; or like Messrs. Cammell, Laird & Co., Ltd., a vertical combination with a capital of over £7,000,000, producing a large variety of rolled steel products, finished heavy steel, steamships, war vessels, etc., the result of a definite policy of combination; or, lastly, firms like Messrs. Bolckow, Vaughan & Co., with a capital of nearly £4,000,000, possessing a complete vertical organization for making almost every class of iron or rolled steel products—the resultant of the first method, the progressive expansion of the resources of one firm, founded in 1850.[2]

The effects of such considerations upon the costs of production, productive efficiency, and competing strength are apparent. The firm can almost arbitrarily and independently adapt the managing and producing policy so as to take the greatest advantage of "process" circumstances and contemporary "market" conditions.

The general or "sectional" depression of the different branches of the steel market may necessitate short

[1] Vide *Tariff Commission Reports*, § 62–66.

[2] Cp. *The Trust Movement in British Industry* (H. W. Macrosty), Chap. ii.

time in running the steel plant, but the management can continue to work the blast furnaces so as to produce iron for sale or stock and at the same time maintain its activities in the least depressed steel markets. When the prices of steel begin to rise again, it can immediately resume its former policy and at once enter the market so as to take the earliest possible advantage of the upward tendency, always trying to keep the total output of various classes of products as large as possible.

So far the inquiry has shown in some degree why the vertical development of combination is so largely exhibited in the iron and steel industries. From any point of view it is seen that it is closely interwoven with the general development of these industries and their technical working under modern conditions. These all tend towards the concentration of production, the co-ordination and consolidation of interests and processes within the industries. Their special and peculiar conditions are lacking in other main industries; therefore there is the less impulse towards vertical development in the latter. Thus it is found that the development of vertical combination is exhibited within them less distinctly and less extensively. However, in many industries it is possible to discern elements or indications of a line of development which is somewhat akin to that of vertical combination.

It has been found that in the textile industries the dominant tendency is towards the utmost specialization as between the various branches and the enterprises engaged within them respectively.[1] There exists the greatest separation between various branches of manufacture, and also between the various stages in the purchase and preparation of materials. Separate firms or groups of firms are engaged in the branches of spin-

[1] Cp. *The Lancashire Cotton Industry*, and *The Cotton Industry* (S. J. Chapman); *The Woollen and Worsted Industries* (R. S. Clapham); *The Cotton Industry* (Atkinson), etc.

ning, weaving, bleaching, printing, etc., in the cotton trade. Even within these specialized branches there is sometimes further specialization, *e. g.* the spinning of coarse counts or of finer counts by groups of firms according to the particular districts.[1] Similarly, the woollen and worsted industries are exceedingly specialized under the various branches of combing, spinning, weaving, dyeing, etc.[2] The dominant feature is the tendency towards specialization, and not towards concentration of processes and branches under the centralized control of large vertically organized enterprises, as in the iron and steel industries. The conditions of the industries differ, and therefore the particular line of development followed by the combination tendency within them appears to differ accordingly. Specialization tends to increase the number of firms within the various groups, and therefore their direct mutual competition. The "horizontal" development of industrial combination must be the best method of eliminating this competition, and this fact partly accounts for the very extensive development of horizontal combinations within the textile industries.

However, when the processes and stages of manufacture are specialized among firms or groups of firms, the finished product of one firm is frequently the raw material of the firms engaged in the more advanced processes, *e. g.* cotton yarn is the raw material for the thread-making firms and weaving firms; the finished product of the weavers passes out as the raw material for the bleachers, printing firms, etc. Thus difficulties and friction are likely to arise between firms so related in the course of their mutual bargainings. Now the method of combination resorted to in order to eliminate this friction must be that of the vertical development. Thus an element of vertical combination is found where one firm seeks to secure some control over its supply

[1] *The Lancashire Cotton Industry* (Chapman).
[2] Cp. *Woollen and Worsted Industries* (Clapham).

of raw materials by obtaining a financial interest in firms which produce these materials as their finished product. This has been termed the method of mutual investment, or "investment alliance," and certainly does seem akin to the development of vertical combination. Messrs. J. & P. Coats, Ltd., thread manufacturers, are said to have secured some control over their supply of raw materials—fine yarns—by buying up a large interest in the Fine Cotton Spinners' and Doublers' Association, Ltd., who produced these yarns. Similarly, the Bradford Dyers' sought to secure its supply of coal—so important a raw material, and one which is so liable to fluctuations in prices—by obtaining an interest in a coal-producing firm. This method of mutual investment or investment alliance is probably more widely applied in practice than is generally known.

Typical instances serve to show how some indications of the vertical development of combination can be discerned even in the textile industries, which, without doubt, constitute the stronghold of horizontal combinations.[1] Surveying the position of the tendency towards industrial combination generally, the horizontal development of combination, in the three directions indicated earlier, must be considered to be predominant over the whole range of industries generally. Though indications of the vertical development are discernible outside the iron and steel industries, they are of secondary importance, and are exhibited only in more isolated directions. This is naturally and necessarily so. The circumstances which make the vertical development of combination so important and distinctive in the iron and steel industries have been seen to be peculiar to these industries. In the other main industries the prime motive of combination is the desire to eliminate direct competition between rival firms operating on the same levels of industry and competing in the same markets. Consequently, the forms of industrial combination which are negotiated

[1] Cp. *The Trust Movement in British Industry* (Macrosty), Chaps. v and vi.

and organized between such firms fall within the horizontal development.

Yet a broad view of the aims and motives of the vertical development makes possible the inclusion of instances of it taken from several other industries. As in the instances taken from textile industries, these general aims reveal a desire to increase the productive efficiency and competing strength of a dominant unit, by adding to its range of activities, and by seeking to minimize the friction which may arise at any time through interference with its operations.

Thus in the shipping industry there are instances of combinations formed between lines which are engaged on "complementary" and not "competitive" routes.[1] Since their routes are different, it cannot be said that the combinations of such firms are horizontal, *i. e.* formed to eliminate competition between direct rivals. Such unions seek to increase the efficiency of the dominant resultant unit, and are, therefore, akin to the vertical development of combination. Thus the Canadian Pacific Co. united with the Beaver Lines in order to make the joint service a more efficient connection between Canada and Europe. So also the Ellerman Lines linked up several complementary services to the intermediate ports on the route to India and the Cape, *e. g.* to Spain, Portugal, Mediterranean ports, and the Levant. In such cases an important result was the wide range of the activities and the efficiency of the dominant unit.

The present tendency in some of the manufacturing industries, *e. g.* boots, clothing, drugs, wallpapers, etc., and also in some branches of the extractive industries, *e. g.* coal, oil, and cement, by which a large producing unit seeks to secure some control over the distributive processes of the trades, appears, in a sense, to be somewhat akin to the vertical development of combination. Speaking broadly, an end in view is the acquisition of

[1] Cp. *The Trust Movement in British Industry* (Macrosty), Chap. xii.

a more complete vertical organization and the absorption of intermediate and collateral profits. In this connection there are also interesting items, *e. g.* the acquisition by Messrs. Lever Brothers, soap-makers, of oil mills, and copra fat supplies in various parts of the world, in order to secure their supply of raw materials and absorb intermediate profits. So also the paper and printing enterprises have secured lumber forests and pulping mills in order to ensure their supply of paper. For with the vast consumption of paper a rise in prices would be a serious item, while the intermediate profits absorbed must be very considerable.

However, it is quite clear that vertical combination is the *characteristic* development of the combination tendency in the iron and steel industries alone. In the other industries within the scope of the inquiry its operations are exhibited only in isolated directions and possible cases; here horizontal combination is, of course, the characteristic development of the general tendency towards industrial combination. Vertical combination is a means of realizing the general aim of enterprises in all branches of industry and commerce. It is, therefore, only natural to find that efforts are made by firms to increase their efficiency in production and competition by various means which, from their very nature, must carry some connection with the development of vertical combination—one of the chief means of attaining this end.

However, rigid demarcation is impossible in actual practice since the various lines of development are intricately involved and closely interwoven. In some of the leading horizontal amalgamations there seems an element of the vertical development. Thus, for example, the Calico Printers' Association sought to "integrate" some control over distribution by the inclusion in the amalgamation of thirteen old-established firms engaged in merchanting calico prints.[1] Similarly, the Wall Paper Manufacturers, Ltd., sought some con-

[1] Cp. *U.S. Industrial Commission Reports*, Vol. xviii, Part i, App. i, p. 41.

trol over the supply of raw materials and complementary products by including in the fusion two paper-making works, one factory for enamelled paper, and works for the manufacture of anaglypta, cordelova, and lignomur.[1] These works did not, of course, come into direct competition with wallpaper manufacturers; they were rather complementary branches of the trade, and their inclusion exhibits an element of vertical combination.

Another instance is supplied by the policy of the Bradford Dyers' Association, Ltd., in including a colliery company among the properties controlled by the combine. It is very important in the manufacture of textiles to secure coal supplies at fairly uniform and reasonable prices.

Just as indications of a vertical development are found in the various industries and in some leading horizontal combinations, so also, only far more extensively, are horizontal combinations found in the iron and steel industries, of which the vertical development of combination is so marked a feature.

It is found that some of the leading vertical amalgamations contain within them a very decided element of horizontal combination, *e. g.* Messrs. Dorman, Long & Co. was a fusion of the firm of Dorman, Long & Co., steelmakers, with Bell Brothers, self-contained pig-iron makers. The former firm desired to secure control over its supply of raw materials; later, the North-Eastern Steel Co. was added to the amalgamation, and this enterprise produced some classes of rolled steel products similar to those of Messrs. Dorman, Long & Co.

Thus, although the amalgamation is essentially an excellent instance of the vertical development of combination, it also involves the principle of the horizontal development. However, the latter may be fairly considered to occupy a secondary position in such cases. The combination of Messrs. Dorman, Long & Co. represents, primarily, the vertical development of indus-

[1] Wallpaper Manufacturers (Ltd.), Prospectus, p. 2.

trial combination. Yet it involves the elements of horizontal combination in that two out of the three units combining were direct rivals in the same markets for certain classes of steel. This extinction of mutual competition between firms engaged in similar processes involves the development of horizontal combination of a permanent character. However, this occurred more as a secondary development. The primary motive for such a form of combination is to base the production of steel products upon the firm foundation of the control of the supply of raw materials.

Taking another typical instance of vertical combination—Messrs. Guest, Keen & Nettlefolds—the element of horizontal development can be discerned here. For Messrs. Nettlefolds are said to have entered the combine in order to establish their position as screw-makers more securely against competition by obtaining control of their own supply of raw materials, and by absorbing all intermediate profits; and that Messrs. Guest, Keen & Co. sought to extend their activities and secure a more regular market. However, the fusion of these firms involved the extinction of some degree of direct mutual competition, and consequently the horizontal development of combination. For "Messrs. Nettlefolds were not only screw-makers, but manufacturers of goods so similar to their own (*i. e.* Messrs. Guest, Keen & Co.) in many cases that the line of demarcation was so obscure that it could hardly be explained. . . . and in many instances . . . they had been regularly selling in competition with each other."[1] In so far as their amalgamation ended this direct competition, it partakes of the character of horizontal combination. Yet this does not alter the fact that the amalgamation primarily represents a vertical development of combination.

The subsequent inclusion of Messrs. Crawshay

[1] *The Trust Movement in British Industry* (H. W. Macrosty) Chap. ii, pp. 38–9.

Brothers, Merthyr, secured additional supplies of raw materials for the existing combine of Messrs. Guest, Keen & Nettlefolds. The position of Messrs. Crawshay Brothers as steel-makers meant that their inclusion in the combination of Messrs. Guest, Keen & Nettlefolds also involved a degree of horizontal combination.

Taking another instance—Messrs. Baldwins, Ltd.—an analysis of this vertical amalgamation shows that it involved some degree of horizontal combination, owing to the relations of the firms included within it in certain markets.

However, in this case also the primary motive was to make the resulting unit—Baldwins, Ltd.—self-contained for the manufacture of galvanized sheets, tin-plates, and steel products.

These instances may illustrate how the lines of development, vertical and horizontal, are interwoven in actual practice even in the iron and steel industries, though the former represents the most characteristic direction followed by the general combination tendency within these industries.

Similarly, while the vertical combinations are almost invariably permanent fusions, some isolated indications of the vertical development can be found under the form of terminable associations. Thus one finds some firms operating at the higher stages of these industries contracting with firms engaged at lower stages for their supply of raw materials, *i. e.* mainly half-finished goods. In some cases this is the result of old-established trade connections, or in others the result of agreements temporarily entered into; *e. g.* at the time of the threatened break-up of the Scotch Steel-makers Association, May 1910, it was stated[1] that some of the members of this association were also in agreement with certain outside firms for the supply of half-finished materials. These members wished to secure their supply of raw materials by means of such temporary agreements; they demanded

[1] Cp. *The Times*, May 13, 1910.

that these should be recognized and allowed by the Scotch Steel-makers Association before they would consent to adhere to the association. It seems that in the end they secured their object, since their withdrawal from the association might have brought about its collapse. This is an interesting illustration which shows how a form of temporary combination may fall within the vertical development, where the form of organization usually assumed is that of permanent combination.

So far the inquiry has been carried on mainly by means of historical and analytic methods. The development and the general conditions governing the working of the firms engaged in the iron and steel industries have been examined in order to estimate their influence as causes and determinant circumstances of the development of the combination tendency within them. It is seen that the special and peculiar conditions of these industries and their general development are factors of the highest importance.

It is now possible to make use of the other method of inquiry, viz. by means of some comparison of the vertical development of combination in England with the position of other countries, *e. g.* Germany and U.S.A., in this connection. Such a method may serve to indicate where and how far national circumstances have produced peculiar national characteristics in the developments. It will then be possible to discern more clearly some causes for the development of vertical combination in the iron and steel industries, which are influenced by general economic conditions peculiar to England.

The complete vertical organization of industry on a national scale is, of course, impracticable; thus a textile firm would have to make its own machinery, produce its raw materials, etc. Production would probably become less efficient, if not impracticable. Even in the case of the iron and steel industries, so suitable for vertical combinations, their complete vertical organization on a national scale is impossible, except under

special conditions. These conditions are lacking in England. Thus highly organized vertical combinations like Messrs. Guest, Keen, & Nettlefolds, Ltd., or Baldwins, Ltd., controlling a most complete range of processes in certain branches of these industries, are from the above point of view specialized or incomplete. It is not practicable for them to integrate every related and auxiliary process. This feature becomes more apparent when such firms are compared with some enterprises in the iron and steel industries of U.S.A. as regards the completeness of their vertical organization. The vertical organization of these industries in U.S.A. most certainly exhibits a far greater degree of thoroughness and extensiveness.

Accepting the view of Herr L. Glier, the supreme position and complete organization of companies like the U.S. Steel Corporation and the Illinois Steel Co. in the iron and steel industries of U.S.A. made the vertical organization of these industries "complete, even on a national scale."[1] Such a position is, of course, lacking as regards the development of vertical combination in these industries in England. For, taking the Steel Corporation as an instance, it appears to afford very considerable evidence of the vertical development of combination.

In his analysis of the position of the iron and steel industries in U.S.A. and the particular references to the large amalgamations which have been formed, Herr Glier seems to conclude that these large amalgamations are largely the result of the development of the iron and steel industries in U.S.A.; also, that the control of a wide range of processes by a comparatively small number of firms is partly a result of conflict between producers and consumers of semi-finished products. So far as the U.S. Steel Corporation is concerned, the position previous to this conflict is said to have been as follows—

[1] Cp. *Tariff Commission Reports*, Vol. i, Section 12, *a*; *Schmoller's Jahrbuch*, 1903–4.

The Federal Steel Co. controlled extensive ore and coal mines, furnaces, and transport facilities, and all the requisites necessary for producing rolled products, particularly those of a semi-finished character. Another large company was the American Steel and Wire Co., which contemplated developments likely to disturb their former friendly relations with the Federal Steel Co. A third company, the National Tube Trust, purchased a great deal of its raw materials in the open market on much similar lines as the firms controlling the manufacture of tin-plates, steel sheets, and hoops. Another large company was the American Bridge Co., controlling the manufacture of girders, bridges, etc., while the National Steel Co. was self-sufficient for the manufacture of rolled steel products which were largely sold for further manufacture. Despite the strength of these large amalgamations, the Carnegie Steel Co. was said to be a match for them all, and its threat to invade the tube and steel sheet markets threw the whole trade into confusion. It has been stated that a form of vertical combination previously arranged between the Carnegie Steel Co. and the Pressed Steel Car Co. suggested a solution of the difficulty. The former company had arranged with the latter to be the source of its supply of raw materials. The important point is that it is considered that the United Steel Corporation was an amalgamation which comprised some of the largest producers and consumers of semi-finished products, and thus helped to save the industries from excessive production, and also "to bridge the gulf between producers and consumers of semi-finished products by combining their interests."

It would appear from the analysis of the position that one of the chief motives for the combinations which have taken place in the iron and steel industries has been the desire of producing units to acquire self-sufficiency. It is also stated that the comparative absence of conflict in the various stages of production

in the large amalgamations in the United States means a great advantage in competition; also that from them it is transferred by reason of the more complete organization to the American iron and steel industries as a whole. The large amalgamations like the U.S. Steel Corporation are in many senses the result of compromise between distinct groups or branches of the industries. Some of the firms included in a new vertically organized combination were previously horizontal "trust" amalgamations in their own particular line of manufacture.

Compared, or perhaps contrasted, with the vertical organization of such enterprises, the most complete vertical organization in the English iron and steel industries does certainly appear somewhat "incomplete and specialized." This is partly and inevitably due to the fundamental differences between the general economic and industrial conditions of U.S.A. and England, and their influence upon the development of the iron and steel industries in these two countries respectively. Indeed, some writers have considered these differences to be so considerable as to prevent any true comparisons. Some of them may be briefly summarized as follows—

The development of the iron and steel industries and that of the firms engaged therein has been quite different in the United States from the course of their development in the United Kingdom. The extensive production of iron and steel has experienced a different history in these countries respectively, and the attendant differences make against satisfactory comparison, at any rate so far as the development of complete vertical organizations is concerned. The vast supplies of raw materials which are available, the position of the firms engaged in the industries, almost from their inception, as to the branches of production which they have undertaken, their management and legal position, and the methods of stock holding—constitute conditions which occasion peculiar differences. In addition there are present the

differences which arise from the general economic and physical conditions peculiar to the United States.

The above is useful in the present inquiry because it indicates some determinant conditions of a national character, which apply with the general result that the movement towards the attainment of complete vertical organisations may well be considered more "specialized" in the iron and steel industries of England than in those of U.S.A. Thus we find that in America the large amalgamations seek to cover a complete range of production, "every branch of manufacture which is subsidiary or instrumental to the final branch—the production and sale of all the commodities of which steel is the chief material." In England, some particular branches of production seem to be becoming the special sphere of the larger firms with a complete vertical organisation, *e. g.* the manufacture of heavy steel products, the construction of war vessels and ordnance, the manufacture of tubes, tin-plate, galvanized sheets, and rolled steel products generally. Other branches of production are comparatively little affected by the vertical development, *e. g.* the small trades located in the districts of Birmingham and Sheffield, sundry engineering trades and general shipbuilding, etc. It is also asserted that there has recently been a revival in the production of materials from wrought iron, which was at one time the stronghold of the small independent firms; also that at present there are nearly 32 firms with over 600 puddling furnaces and nearly 300 smelting furnaces manufacturing wrought iron in the Black Country. However, it seems quite clear that the concentration of the important sections of the iron and steel industries around groups of the larger firms certainly does appear to be a predominant tendency operative within these industries. The co-ordination and consolidation of large interests has been rightly termed one of the most marked features of the English iron and steel industries in modern times. It also seems clear that the development of vertical

combination as a means of co-ordinating and consolidating interests and production in these industries is in accordance with and involved with their evolution under modern conditions, and is largely determined by their technical conditions. Naturally, it is found that the development of vertical combination, as a means by which a complete vertical organization of production is attained, exhibits evidences of the somewhat general tendency towards specialization. The iron and steel industries of England seem to differ considerably from those of other countries in this connection, if only on account of the different processes of evolution through which they have passed; but apart from the influence of the general tendency towards specialization within these industries in England among various groups of firms in the different districts, certain special forces have also tended strongly in this direction in some branches.

Just as the completeness of vertical organizations in the iron and steel industries of U.S.A. is largely due to special national conditions, so also the more incomplete or "specialized" development of vertical combination within these industries in England can be largely traced to the influence of national conditions peculiar to them. Thus it is found that the development of the large vertical combinations dominating the heavy steel industry is due partly to the circumstances already indicated, *e. g.* the necessity for large capital to be fixed in plant (with the consequent check on the establishment of new firms), the excellent sites and resources possessed by the nuclei of the firms in these industries, and the world-wide reputation of their products. But special impulse seems to have been given to the development of large units in this particular branch as compared with others by what has been known as a system of "Administrative Protection." The English Government, in applying for tenders for war vessels and armament, has stipulated that the materials used shall be of British manufacture as far as possible. This has given a special

differential or protective advantage to this industry, and has assisted the development of the firms engaged within it. Since all the materials must be British made as far as possible, the firms interested have had a special inducement to cover the whole range of processes and products of themselves, so as to absorb the intermediate and collateral profits rather than pass them on to other units. This has not only been a profitable policy for the firms which possess this vertical organization, but also an essential method of ensuring the utmost productive efficiency and competing strength of the resultant dominant units; for there is no conflict or friction in the various stages of production and no defective links in the chain of processes, the strength of which is that of the weakest link. The position of English firms engaged in these industries in the world's markets affords ample testimony to their efficiency.

It has often been pointed out that a noteworthy feature of company management in the English iron and steel industries is that the same parties are largely interested in several companies. This seems to be particularly so in the case of companies engaged in the lower branches manufacturing pig-iron and rolled steel products. Firms which have been engaged under independent management at connected processes of these industries are all the more likely to become units in a vertical combination where the same parties are interested in them all. It has also been said that with a view to establishing some more stable bond of interest between firms so related, the system of mutual stock-holding or "investment alliances" has been developed. Thus one firm supplying another with semi-finished products—for example, pig-iron, steel ingots, billets, or bars—seeks to obtain an interest in the stock of the latter in order to secure its market to some degree. Similarly, in the case of a firm which obtains for its raw materials what is the finished product of another firm, the former will seek to obtain an interest in the latter in order to guarantee

its supply of materials. This policy is also resorted to in branches of the textile industries where firms are so related and mutually dependent. It would seem that the transactions by means of which such mutual interests are secured are not so much casual or occasional incidents in the ordinary business of the share markets, but rather that they constitute a deliberate policy of introducing some element of steadiness into the bargaining relations of the firms concerned. On the one hand, a firm can secure some control over its supply of semi-finished products, while on the other the firms producing these can secure a more constant market and also absorb some portion of the intermediate profits. This policy of controlling the investments might naturally tend to develop into a more definite and stronger form of vertical combination. Sometimes this feature with regard to stock-holding and investment alliances is exhibited in an interesting form; for example, where the same persons are represented on the directorate of a number of firms engaged at connected stages. The close relations would appear to be subsidiary factors which have tended to assist the formation of several vertical combinations in the iron and steel industries, as has been pointed out. It is strongly at work even in the tin-plate trade, for "steel-makers are securing controlling interests in tin-plate works." The latter are among the largest consumers of semi-finished steel, and the steel-makers wish better to secure their home market.

Every development of the combination tendency in England seems to possess a character defensive rather than aggressive, since the general motive underlying them is the desire to limit the existing conditions of competitive industry. But in applying the term to the vertical development as evidenced in the iron and steel industries, it would seem desirable to indicate some slight modifications. Of course, vertical combination is certainly a form of defence against the operation of bargaining conflict rather than against that of direct mutual

competition, as with the case of the horizontal combinations. It is also true that vertical combination may be resorted to as a defence against horizontal combination. In Germany, different stages in the production of iron and steel became controlled by sectional cartels comparatively early, and these horizontal combinations exercised very considerable influence. There were syndicates for controlling the sale of coal, lignite, coke, briquettes, iron ores, pig-iron, foundry products, finished iron, steel forgings, steel castings, wire, old iron, pipes and tubes, plates and sheets, etc. The industries as a whole were honeycombed with these sectional horizontal combinations, and it has been said that the producing firms co-operating at various stages, particularly at the final stages of the industries, were considerably hampered by the difficulty of securing a supply of raw materials or semi-finished products regularly or at uniform and reasonable prices. For each sectional cartel naturally aimed at the regulation of output and prices in its particular branch solely for its own advantage. (Cp. *Industrial Combination—Macgregor —Kartelle*).

Under such circumstances a self-contained firm would be in a very advantageous position. Thus there might arise a special impulse towards the development of a complete vertical organization of production as a means of avoiding the hampering influence of sectional cartels; for the influence of these sectional cartels was aggravated by the fact that the protective tariffs in Germany made it impracticable for firms engaged at the more advanced stages to secure half-finished materials from abroad at profitable prices on all occasions. The development of a vertical organization under such conditions would thus be influenced by a motive which should be considered to be "defensive" in a particular sense. The absence of such cartels in the English industries, and the free importation of raw materials and half-finished iron and steel products into England, account largely for the fact

that the impulse towards securing a vertical organization which has applied strongly in Germany does not seem to have been operative in England.

It will be seen later that the policy of Free Trade as adopted in England exercises an enormous influence upon every phase of the combination tendency in this country. It would seem probable that the development of "mixed" works in the tin-plate trade (*i. e.* tin-plate firms producing their own steel) might have proceeded more widely and rapidly had there not been such facilities for importing semi-finished steel bars, blooms, and billets. This is from the point of view of the tin-plate firms; from that of the steel-making firms it must be admitted that this free importation of the very products they produce is likely to make them more desirous of securing their market by means of some form of vertical combination with tin-plate firms, or by advancing, of themselves, to the manufacture of tin-plate and galvanized sheets. Thus there arises a twofold impulse towards the development of vertical organizations in these branches of the iron and steel industries, as is borne out by what is happening in South Wales in this connection. Not only are steel-makers securing controlling interests in tin-plate works and advancing to the production of tin-plates and galvanized sheets, but producers of tin-plate are seeking to base their production upon the firm basis of some control over their supplies of semi-finished products. However, the free importation of such products makes this question less acute for those engaged as tin-plate and galvanized sheet producers, save in so far as the advantages of securing immediate and collateral profits are concerned.

As regards the influence of foreign competition generally, in its connection with the development of vertical combination in the iron and steel industries, it would seem that the movement is in many ways peculiarly "defensive." It has been seen that the modern development of the iron and steel industries in England and their present position have been very powerfully

influenced by their relation to foreign competitors. In various branches of the industries English firms have realized that one of the best means of meeting foreign competitors is to secure the utmost protective efficiency and competing strength in certain well-established branches, in order to make them less vulnerable to foreign competition. The development of a complete vertical organization appears to be the most suitable means of attaining this end, since it not only increases productive efficiency and competing strength of an enterprise, but also ensures a wide range of production. It is interesting to notice that the possibility of easily importing semi-finished materials would appear to make it less necessary for firms requiring them to secure their own sources of home supplies. In practice this is not altogether satisfactory, for several reasons, *e. g.* there is involved the costs of resmelting and reheating, the loss of immediate and collateral profits, and also the possible uncertainty as to supplies. It would be also more undesirable to be dependent on foreign firms than on home firms. In cases where firms in England are engaged at connected processes, or where firms produce semi-finished materials for further manufacture, the formation of a complete vertical organization in certain branches has appeared the more desirable policy. Vertical combinations were made in accordance with the law that where progress ends retrogression begins.[1] It seems clear that in certain branches of the industries a complete vertical organization would not save or greatly improve the position even were it practicable to attain it, *e. g.* the production of certain classes of machinery and hardware, foundry castings, etc. For it must be recognized that there are certain "external" conditions of combination which determine the possibility of forming effective combinations, as well as "internal" conditions which create the desire or necessity for their establishment.[2]

[1] Supplement to *The Sheffield Daily Telegraph*, January 28, 1911, p. 19.
[2] Cp. *Industrial Combination* (Macgregor), p. 115.

The "external" conditions apply to the vertical development, *e. g.* where the firms operating at various connected stages are comparatively few and so situated that a vertical combination would be highly advantageous to them all, the process of formation is likely to be facilitated considerably. Similarly, the existence of old-established trade connections forms a basis for mutual investment alliances, and thence perhaps for some definite and deliberate form of vertical combination. Thus it is found that Messrs. Cammell, Ltd., had been in close business connection with Messrs. Laird Brothers previous to their combination, for the former were producers of the materials utilized by the latter firm; so also with the case of Messrs. John Brown, Ltd., and the Clydebank Engineering and Shipbuilding Co., Ltd., or with Messrs. Vickers, Sons & Maxim, Ltd., and the Naval Armament Construction Co., Ltd. Messrs. John Brown & Co., Ltd., are said to have been one of the best customers of Thomas Firth & Sons, Ltd., previous to their becoming linked up by form of vertical combination. This feature seems to be evident throughout the various vertical combinations in the other branches of the iron and steel industries. Messrs. Nettlefolds purchased much of their semi-finished materials from Guest & Co. previous to their amalgamation. Messrs. Wright, Butler & Co. supplied Baldwins, Ltd., of Swansea, with a considerable portion of their raw materials previous to their combination vertically.

It also seems probable that firms will not enter into vertical combination with one another unless they are so situated that the resultant combined organization will prove profitable to all, and also practicable as regards the various conditions of their particular branches of production. It is interesting to notice that the "external" conditions of combination—those relating to the number, circumstances, and size of the enterprises engaged in an industry—which will be found to apply so strongly to the horizontal development of

combination, also seem to apply to the case of the vertical development. It is noticeable that the firms which combine vertically are almost invariably very few in number. This appears all the more striking when contrasted with the case of horizontal amalgamations where the parties concerned sometimes number twenty, thirty or more. This feature suggests an "external" condition which influences the formation of vertical combinations.

What might be considered an interesting feature of contrast between England and the United States, as regards the development of vertical combination in the iron and steel industries, is the fact that in England many instances show that the vertical combinations often precede and prepare the way for subsequent horizontal combinations between the vertically organized units. In America the organization of these industries by means of powerful horizontal combinations seems to have been one of their most prominent and earliest features. It seems quite certain that the establishment of a small number of very strong firms, each with a complete vertical organization of production in its particular branches, tends not only to increase the severity of unrestrained competition between them, but to make more apparent and also more easy of attainment the advantages of horizontal combination. Thus in England instances are found of the formation of horizontal combinations following that of vertical combinations in these industries.

Of course, this is only a minor point of comparison, for in a broad review of the situation, and apart from some particular points of difference, the development of a complete vertical organization of production in the manufacture of iron and steel products presents the same essential features in England, the United States, and Germany alike. The main motives of formation, the ultimate effects upon the organization of production and distribution in these industries are

much the same in each case. However, the development of the vertical combinations in England must stand apart, in so far as it is determined by the national circumstances of the industries, particularly as regards their evolution and general conditions of working.

It really appears to be largely a natural or normal development which has arisen to meet the modern requirements of the industries. This appears very strongly from the manner in which it has been found to be intricately involved with their evolution and general working conditions. The movement seems in many ways an effort to realize the sound opinion that "there is no obvious reason why, if we are to make iron and steel at all, we should not make it under the best and most economical conditions possible to us." The development of vertical combination seems essentially a part of the natural or normal development of the English iron and steel industries to attain this end and meet their modern conditions of production and distribution. Of course, it does not seem possible to assert that the only form of organization which can successfully persist in these industries is that of the vertical combination. This is clearly seen from the fact that certain important branches of them are altogether unfavourable on account of their technical conditions, the character of the enterprises engaged within them, and their general circumstances. Certain branches of these industries would seem likely to remain the stronghold of the small enterprise, while other branches are tending more and more to become the province of the large firms possessing vast resources. It cannot be too strongly emphasized that the position of vertical combination in relation to these industries is essentially dependent upon, or determined by, the actual conditions which prevail in their various branches, as well as by what may be termed the "external" conditions influencing their development. Yet it seems quite possible to conclude that, whatever be the future development of the iron

and steel trades in England, certain branches of production are, from their very nature, favourable and in many ways privileged spheres for the large vertically organized enterprises. In such branches the development of vertical combination as a means of rendering production and distribution more efficient and profitable seems likely to maintain, if not to increase, the great influence which it has secured already.

Chapter IV

HORIZONTAL COMBINATION—THE MAIN DIRECTIONS OF DEVELOPMENT

SOME GENERAL CAUSES AND DETERMINANT CONDITIONS

As a modern writer has pointed out, the different forms and developments of the combination tendency, "like most economic phenomena, are the result not of a single cause, but of many different circumstances." [1] This is specially evident when the main directions in which the development of horizontal combination has proceeded in English industry are investigated. The general position has been indicated already; it is only necessary to recall it briefly.

The governing principle of horizontal combination—the "representative" development of industrial combination in every country and in every industry—involves the combination of enterprises which previously operated independently in the same branch of industry and competed directly in the same markets. Since the most general and fundamental cause of industrial combination is the suppression of mutual competition in favour of mutual regulation, the great majority of combinations are horizontal in character. Obviously, this regulation can be realized and exercised in varying degrees, according to the intentions of the organizers of the combinations, the intensity of the organization resulting, the sphere of influence and proposed duration of the combination. Thus it is found that the de-

[1] *Trusts, Cartels, and Syndicates* (Raffalovich), p. 345.

velopment of horizontal combination appears to have proceeded in three main directions, according as it has been modified in these respects. The result has been the formation and development (*a*) of temporary combinations, formed for specific periods and specific purposes, apart from which the member firms retain independence; (*b*) of permanent combinations, in which the combining firms amalgamate for all time and all purposes; and (*c*) of the more recent and interesting class of intermediate or "hybrid" formations, in which the combination is mainly terminable in character, for specified purposes and time, yet assimilates a permanent element involving the complete surrender of certain functions by the combining firms, usually the control of distributive functions, in favour of a joint organization. These directions of development are certainly considerable enough to merit separate investigation. Such an analysis must facilitate any inquiry into the character of the development of horizontal combination generally.

It is seen that the main distinctions between them turn upon the "standards of classification" indicated earlier—the intensity of organization, period of duration, and extent of control of the resultant organization; also that they are much alike as to the general motives and conditions underlying and determining their formation, development, and operation. Therefore, up to a certain point the investigation of the causes underlying and the conditions determining these three directions of development can proceed on parallel lines—that is, in so far as they seem to overlap. This is possible only in so far as it deals with the "general" conditions which induce or occasion the desire for their formation, and those which determine the possibility of realizing such desires in actual practice.

But where the circumstances differ as regards the methods of carrying out projects of horizontal combination, the possibility of realizing them, their probable

operation and effects, the problem is to estimate the influence of such "special" circumstances. It will be seen that they almost invariably arise out of the peculiar conditions of certain industries as regards their external relations to markets at home or abroad, and also to special technical circumstances of production. These special circumstances arise, in turn, from the influence of peculiar local, physical, or national conditions.

However, such a broad division of the conditions and causes of horizontal combination seems quite possible as a means of facilitating inquiry. There certainly are "general" causes whose operation is common to every country and every industry (*e. g.* the manifold operation of competition), and also "special" circumstances peculiar to certain countries or certain industries—*e. g.* tariffs or legal conditions in U.S.A. and Germany; railroad discriminations in U.S.A.; the number and size of the firms in various industries; the local and natural advantages of firms in certain industries, etc. By means of an analysis of typical instances taken from various industries, the influence of such conditions can be illustrated, and the validity of any conclusions which may emerge can be put to the test.

Both the "general" and the "special" circumstances which influence the development of horizontal combinations, in any one of the directions indicated, may be broadly divided into two classes, which may be termed respectively "internal" and "external" conditions of combination. The former class comprises those conditions of industry and commerce which cause the necessity and the desire for combination on the part of producing firms—*e. g.* the loss and depression produced by competitive price cutting. The "external" conditions of horizontal combination are those which determine the practical value of schemes of industrial combination—the possibility of putting proposals into effective practice.[1]

[1] Cp. *Industrial Combination* (Macgregor), p. 115.

It is found that the "internal conditions" are usually "defensive" or remedial as to the motives which give rise to them. The main motives which underlie them are usually the expression of a desire to eliminate the losses of mutual competition, to oppose and, if possible, control the operation of the competitive system.[1] Still, the conditions or motives which give rise to a desire for industrial combination are not always remedial in character, as, for example, when a number of firms in an industry unite to exploit some monopolistic advantage possessed by them in common. However, the circumstances which occasion the desire for horizontal combination in England are usually remedial in character. The combinations which are formed are primarily "defensive" rather than "aggressive." In fact, one writer has termed this the characteristic feature of industrial combinations in England as contrasted with those of U.S.A.: For with a few exceptions, the entire group of horizontal combinations in Great Britain seem essentially defensive, and not aggressive organizations. It is the distinct and often avowed tendency towards monopolization that differentiates the combination movement in America especially, and to a somewhat less extent in Germany, from the development of this same movement in England.[2] This view was expressed in 1902, and, though subsequent developments may reveal some exceptions, it is probably a correct expression of the position, speaking generally. Therefore one may expect to find "internal" or "causative" conditions which are mainly "defensive" in their nature and general operation.

As has been pointed out, the development of horizontal combination cannot be properly understood without a clear understanding of the operation of the competitive system out of which it arises.[3] However

[1] Cp. *Industrial Combination* (D. H. Macgregor), p. 115.
[2] Cp. *The Economic Journal*, 1902, "American Trusts and English Combinations."
[3] *The Trust Problem*, Chap. i, p. 10.

widely writers of various countries may differ as regards the significance and ultimate results of horizontal combination, they seem to agree upon one point, at any rate. There is a marked consensus of opinion that a general origin for every form of horizontal combination can be found in the operation of the competitive system. This is one of the most definite features which emerge from a study of the problem of industrial combination. Evidence in support of it is available on every hand.

The operation of the competitive system can, therefore, with certainty be taken as a common "general" cause for the development of horizontal combination in any direction. (Of course, "competition" in these cases refers to the direct mutual competition existing between firms engaged on the same levels of industry, and not to the bargaining friction and indirect competition which the vertical development of combination aims at eliminating.) Among the more unqualified expressions to this effect, those of the inventor of the "New Trades Combinations" or the "Birmingham Alliances" are typical: "Competition is unjustly severe and ruinous . . . unnecessary and insane . . .; combinations have been organized to prevent this cut-throat competition." [1] As a result of careful investigation, especially in U.S.A., it has been concluded that horizontal combination is "an attempt to lessen, and, if it may be, avert altogether the disastrous and harassing effects of cut-throat competition" which represents "the underlying cause of the movement." [2] After an exhaustive inquiry into the development of horizontal combinations in Great Britain, it has been considered that the ever-present, specially active cause is always the existence of destructive competition.[3] Similar conclusions are expressed by investigators and writers of various countries.

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[1] *New Trades Combination Movement* (E. J. Smith), p. 6.
[2] *Economic Journal*, June 1899, p. 168.
[3] Cp. *Trust Movement in British Industry*, Introductory and Chap. xiv.

The most official conclusion is that of the U.S. Industrial Commission, which reports, with reference to the causes of the later combinations in England, as elsewhere, that "beyond question the influence that has been most prominent" in bringing them about . . . "has been the desire to escape the results of competition which is considered by the manufacturers as unreasonable and destructive." [1] Its conclusion with regard to the position generally is similar: Among the causes which have led to the formation of industrial combinations . . . competition . . . is to be given the first place.[2]

As a result of these and similar expressions one conclusion seems to be established beyond question—that the development of horizontal combinations, whatever the particular form or direction it takes, arises out of the general operation of the competitive system; that horizonal combination is the result of an endeavour to control the operation of competition, or, if possible, to eliminate it altogether by means of combination between the rival firms, by the substitution of combined action in place of independent rivalry.

Thus there has arisen a check to the evils which arise from the operation of excessive and ruinous competition —"artificial," so to speak, as opposed to "the natural check of the survival of the fittest."

But, unfortunately, "excessive competition," like "self-sufficiency," is not a self-explaining term. In order rightly to understand its relation to the development of horizontal combinations in England, one must seek beneath the surface for fundamental causes underlying its operation.

First, how has the operation of competition become "excessive" so as to produce depression and industrial disaster in various industries, causing the enterprises engaged therein to seek a remedy in horizontal combination in one of the directions indicated? Further,

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[1] *Industrial Commission Reports*, Vol. xviii, Chap. ii, *a*.
[2] *Ibid., Preliminary Report.*

why has the development of combinations of this character been so tardy in British industry, as compared with the position in U.S.A. and Germany? Lastly, why has the effectiveness of such combinations varied so much in different industries? For, as was indicated, the complaints against the evils of competition are of very long standing (*cp.* the Commissions upon the depression of trade, 1833–86), whereas the general and systematic development of horizontal combinations is comparatively recent, especially in the direction of permanent amalgamations and "hybrid" sales associations. Moreover, right up to the present horizontal combinations have proved unsatisfactory remedies in some industries, whereas in others they have not only checked competition, but acquired "a dominance approaching monopoly."

Speaking generally, it is found that the necessity for horizontal combinations is realized, and the desire for their formation induced, according to the intensity of the "internal" conditions of combination, "general" and "special" alike. Upon these influences depends, also, the progress, or rather the "rate of progress," of the movement to a very considerable extent.

The "effectiveness" of the horizontal combinations in various industries, however, will be found to depend upon the degree to which the conditions of the industries constitute favourable or unfavourable "external" conditions of combination. The necessity for the development of horizontal combination as a means of regulating or eliminating "excessive competition" has arisen mainly on account of the nature of the operation of the competitive system in modern industry. The position has been well summed up as follows: It is commonplace—but none the less true on that account—that the great industry of modern times, so long as it is carried on under conditions of individualist competition, has certain inevitable consequences of the gravest character. When a number of separate undertakings,

not only without concert, but . . . in rivalry with one another, are engaged in supplying commodities or services to a market difficult completely to survey, and subject to fluctuation, there are bound to be, from time to time, periods of over-production with its consequences in depression of trade, diminution of employment, suspension of production, and destruction of capital,—crises—produced by the "normal" working of the competitive system. Combinations are resorted to as an attempt to lessen, and, if it may be, avert altogether the disastrous and harassing effects of cut-throat competition.[1]

Such a view as to the origin of the modern tendency towards combination is of itself sufficient to indicate some characteristics, which serve amply to distinguish it from the earlier isolated and informal instances of combinations to restrict competition. The operation of the competitive system during the period intervening has changed the whole aspect of the problem.

But is it possible to go deeper still and estimate what are the forces that influence even what is undoubtedly the underlying cause of the movement towards combination.[2] For the modern combination tendency is assuredly bound up with the modern conditions under which industry and commerce are carried on. These, in turn, are involved with and influenced by the conditions of the development and general working of the various industries, and also by the peculiar national conditions of English industry and commerce.

How, then, does competition tend to become excessive and "productive of inevitable consequences of the gravest character," which necessitate resort to horizontal combination as a remedy?

One of the most noteworthy features of modern times is the tendency towards centralization and concentration in every branch of industrial life. In every country

[1] Cp. "American Trusts," *Economic Journal*, June 1899, p. 167–8.
[2] *Ibid.*, p. 168.

there operates within modern industry and commerce a powerful tendency towards the formation of larger and larger businesses in which capital is relatively more important than other forces. Various statistics show that the size of the "representative" individual enterprises has constantly been increasing. In England this has been especially the case in the machine industries and the "great industry"—*e. g.* the textile, iron and steel, and extractive industries; and also the manufacture of chemicals. The size of the "average" works and the representative firm has been rapidly increasing. Small enterprises are being gradually eliminated, capital tends to group itself in larger and larger masses; the size of the producing units is constantly tending to increase, taking industry generally. Trade tends to gravitate towards larger and fewer units, whose productive capacity increases even more rapidly. Admitting that there may be a point of "maximum growth" at which production and distribution are most profitable, efficient, and economical, modern invention and skill are constantly pushing back the point beyond which the law of Diminishing Returns can no longer be evaded. Further, this tendency gathers strength of itself as it proceeds, for as the existing enterprises increase in size so also do the initial difficulties of establishing new enterprises become greater.

But the increasing size and complexity of the individual producing enterprises must also cause changes in their mutual relations within various market areas. For in most branches of the "great industry" in England, markets do not continue to increase correspondingly with the increasing size and productive capacity of the various producing units. Thus the "effective demand" tends to become insufficient in proportion to the productive capacity always available; there is nearly always a surplus of productive capacity in many spheres of industry, and therefore a certain amount of capital tending to become unproductive or endangered. Thus

existing enterprises are driven to compete fiercely for existing business. As the competitors grow fewer and stronger, their competition becomes keener and more disastrous. In view of the necessity for and the advantages of larger trade and output, more and more energy is directed towards the securing of business, to increasing and facilitating distribution, *i. e.* to competition. Thus competition becomes keener and more internecine on account of the increasing size of the producing units in the various industries; moreover, the intensity of its operation increases directly with the amount of capital involved.

In those industries in which the firms engaged require or possess only a comparatively small amount of capital, competition is at first brisk and salutary. The competing firms are found to differ widely in resources and efficiency. Competition operates as a selective or winnowing force, and eliminates the least efficient. Thus the immediate results are salutary. Yet, as the process continues, the ultimate result is no doubt similar to that produced in industries wherein the enterprises require and possess large capitals. Here the competitors are much alike in resources and efficiency. Competition does not result so much in the elimination of the weakest as in the production of general depression.[1]

But the tendency towards centralization is partly caused and partly accompanied by other conditions peculiar to modern industry, all tending to produce the same disastrous consequences in the very industries where the centralizing tendency operates most strongly. In fact, all the conditions of modern industry which tend to intensify competition seem to be inextricably involved with one another. They act and react upon one another. Their operation is mutual and not serial. The increasing influence of machinery is a potent factor which tends to aggravate and intensify the unsatisfactory effects of the operation of the competitive

[1] Cp. *The Trust Problem* (Jenks), p. 16.

system in modern industry, so as to produce excessive competition, with its inevitable consequences. The manifold influence of machinery in production and distribution has become so vitally important that it is difficult to put it briefly. First, it is certainly one of the chief causes which tend to cause over-production, the consequent depression, and low prices. In the machine industries, where the Law of Increasing Returns is so strongly operative, the inevitable tendency of competition is to necessitate production on the maximum scale, since it is usually the cheapest method. But modern inventions, which have been so largely applied in the machine industries, have, of themselves, vastly increased the means of production or the productive capacity of existing enterprises. Thus, apart from the tendency to increase production in order to cheapen the costs, there is at most times an excess of productive capacity much beyond the effective demand of consumers. The prospect of a revival in trade at once calls forth a great increase in production which soon tends to become a glut and to depress trade and prices. When trade is declining producers hesitate to check their output, consequently the depression is hastened and intensified. Machinery has largely contributed to making modern industry more speculative in character. Producers tend to provide as much, if not more, for the "prospective" than for the actually existing demands.

Moreover, machinery tends to intensify the keen rivalry in the form of price cutting. There is a constant endeavour to utilize mechanical devices which will produce more cheaply than existing appliances. It is in the machine industries that competition is keenest, fluctuations of trade and prices most frequent, and the effects of internecine competition most disastrous.

According to price statistics taken over certain periods, the fluctuations of prices are most extreme in those industries where production is carried on mainly by machinery. The comparisons of the price changes

of wheat and general food stuffs with those of minerals, metals, and textiles, tend to indicate that, especially during recent years, the fluctuations of price in industries producing the latter goods have been more rapid and pronounced.

Again, it is the machine industries that require vast investments of capital in a fixed and almost inextricable form. Machinery represents a form of invested capital as well as a method of production. It is also capital that is easily rendered unproductive under conditions of modern industry and commerce. The difficulty of withdrawing the investments, the losses entailed by the suspension of production, the burdens of standing charges, etc., make the firms engaged in such industries struggle very keenly for some share of the existing trade. Prices are therefore often forced below the costs of production before any reduction is made in outputs. Such conditions must only intensify the severity of any depression which may set in.

It is also interesting to note that it is in these very machine industries that the borrowing and outlaying of capital has to proceed most widely and rapidly, so that standing charges are very considerable whatever the state of production. This development and the massing of capital has been facilitated by the laws governing the Limited Liability Companies. The latter tended to eliminate the independent small producer, and made the struggle for trade keener and more reckless because losses were distributed over a wider area in the limited company. However, "since all the enterprises were moving in the same direction, one could not easily gain upon the other." The competitive struggle was only raised to a higher plane, and became all the more intense.

In modern times vast changes have taken place in the character of our markets and the various conditions governing them. Other nations have developed in industry and commerce, and not only sought to secure their respective home markets for home producers by

means of protective tariffs, but have often pressed heavily upon English enterprises in neutral and even in English markets. Modern industry has become extremely sensitive, and has developed into a delicately-balanced organization. Events taking place within one country very soon produce effects in other countries. Industry and commerce have become cosmopolitan and impersonal. The extent of our modern market areas makes it impossible for English producers to forecast probable demands or control business in independent fashion.

The above outline may serve to show some of the many ways in which the operation of the competitive system in modern English industry has tended to become "excessive" and productive of the disastrous consequences referred to—over-production, depression, and low prices. When such conditions are aggravated by deliberate reckless cutting of prices and normal trade fluctuations, it is only natural that producers should feel themselves forced to try to remedy the situation, to some degree, by means of some form of horizontal combination. Mutual agreement to restrict internecine competition has often become essential for self-preservation. As has been stated, the function and aim of the modern horizontal combination is to get rid of competition and its disastrous results of over-production and low prices, over as large an area as possible by limiting production, regulating prices, restricting competition, and making a common interest among producers.[1] Thus the tendency towards the formation of horizontal combinations may be rightly regarded as "arising out of the operation of the competitive system;" this, in fact, affords a common origin for every form and development of industrial combination.

Horizontal combinations have been largely attempted in those industries wherein the operation of the competitive system has been very unsatisfactory for pro-

[1] Cp. *Trusts, Pool, and Corners* (J. S. Jeans), Chap. ii.

ducers. As has been indicated, there are many conditions which all tend in the same direction of making competition most severe in the machine industries. Thus the American Commission reported that beyond question the influence that has been most prominent in bringing about combinations, particularly in the manufacturing industries of England, has been "the desire to escape the results of competition, unreasonable and disastrous." [1] An indirect proof of this conclusion comes from the view that combinations have developed so extensively in U.S.A. because all the phenomena resulting from competitive production on a large scale have been exhibited there with an intensity never known before.[2] Modern industry in England, as it is carried on under the competitive system, has shown that it is unable to control its own productivity, or to equate supply to demand at all times. The development of other countries, and the closing of their markets by protective tariffs and the growth of their own industries have tended to increase the pressure. There has been a persistent movement towards the reduction of prices and profits, and, at the same time, towards the growth in the size of the producing units. Producers have been induced, if not compelled, to make common cause in order to restrict the disastrous operation of competition.

The position seems to be well illustrated by the typical opinions of many prominent business men, whereby the explanation generally given for the tendency towards amalgamation—for example, in certain branches of the cotton trade—is that it is the best means of preventing the cutting of prices, and the gradual dwindling of profits. The general view of the causes of combinations is that they have been forced on by the undercutting of prices and lack of normal profit, the desire to eliminate severe internal competition and to effect economies.[3]

[1] Cp. *The U.S. Industrial Commission Report*, Vol. xviii, Chap. ii, p. 15.
[2] *The Economic Journal*, June 1899, p. 168.
[3] *Tariff Commission Reports*, Vol. ii, Part i, §§ 76, 375, 434, 453.

It is of interest to note that one of the chief media through which the operation of excessive competition has influenced the policy of producers in the direction of combination has been the falling of profits. Business is carried on for profits, forms of organization are judged according to their profit-earning capacity. This is especially the case since the joint stock company has become the representative form of industrial organization. Thus, industrial combinations have been all the more welcome as a means of regulating industry in a manner more profitable to the combining producers. As the U.S. Industrial Commission reports, profit is the chief motive of business men. Competition in most cases has been the primary cause of the lowering of profits. It is probably just, therefore, on this account to mention competition as the chief cause for the formation of industrial combinations in Europe and U.S.A. alike. Organizers and managers of combinations generally have the dread of excessive competition prominent, if not dominant, in their minds.[1]

Not only does the operation of competition tend directly to reduce prices and profits for competing firms, it also tends to prevent them rising. For even in a rising market each individual firm may be afraid to raise its prices lest others do not follow. Thus any revival or upward tendency in trade cannot be fully utilized unless the rival producers agree to combine for common action. It may be noted that, in one sense, this motive of combination is somewhat aggressive. Again, it has been said that every manufacturer has had more or less experience of the fact that competition is costly, but that probably only the smallest number know just how costly. In every case it involves a great deal of waste —waste from production on a small scale, from relatively high standing charges, from works only partially employed or excessive costs of securing markets, from the necessity of seeing customers frequently or from

[1] *Industrial Commission Reports*, Vol. xix, p. 604.

the various expedients resorted to in order to push sales, from indirect hazardous extension of credits, and from the frequent inability of the small manufacturer to control railway rates, labour, or any other principal element in the cost of production. No one can wonder, therefore, that many and serious attempts should be made by manufacturers to put an end to such waste by one or other of the many expedients of combination for this purpose; indeed, it has been said that considering the impulses tending to get rid of competition, the wonder is that the trust movement has not made greater headway than it has done hitherto.[1]

In a general conclusion, it seems correct to say that all forms of horizontal combination, whatever the particular direction of development, find a common cause in the desire or necessity for producers to restrict their direct mutual competition, which has tended to become so excessive and disastrous under modern conditions of industry.

As was indicated earlier, this constitutes one of the characteristics which distinguish the modern combination movement from earlier isolated instances of combination. In most cases of modern horizontal combination the primary purpose has been to establish such an understanding as to output and prices that the evil effects of competition, in the most serious forms, can be practically eliminated.[2] Thus, the essential motives of every form and development of industrial combination are, above all, "remedial" in character. Yet it must be admitted that, apart from the desire to eliminate competition, the various firms that combine are influenced by the hope and desire of being able to regulate or, if possible, to raise prices by means of their combination.[3] Yet this somewhat aggressive motive for combination operates only to a comparatively slight

[1] *Iron and Coal Trade Review*, March 1, 1901.
[2] *The Iron Trade* (J. S. Jeans), p. 195.
[3] *U.S. Industrial Commission Reports*, Vol. xviii, Introduction and Summary.

extent in England. As will be seen, it is possible to find instances where combination has been deliberately favoured as a means of enabling the existing firms in an industry to exploit some elements of monopoly value which they possessed in common.

It is probable that most combinations have been favoured in some degree as a possible means of furthering self-interest by means of common action. The advantages of being able to control prices and production in some measure can be easily imagined by a business man.[1]

The development of industrial combinations must not be isolated from the operation of the personal factor in industry. It has been pointed out how the force of self-interest has exerted an influence upon the combination movement in U.S.A.[2] And is this not also true in the case of England? Here, above all, the force of self-interest operated formerly only in the direction of individualistic competition. English industry has developed under the complete dominance of individualistic and competitive principles. The acceptance of the principle of free competition was partly a reaction from the restraint imposed by the old system on production and trade.[3] The adoption of combination principles seems to be partly a reaction against the competitive system. Producers seek to further their interests by means of a reversion or resorting to a "combined" rather than a "competitive" form of industrial organization. Here, again, the general motive is one which seems to be aggressive in some sense. This fact appears to suggest one reason why the combination movement has been regarded as an "aspect of the operation of competition."

The U.S. Industrial Commission concluded that what

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[1] Cp. *Trusts and the Tariff* (Bolen), p. 3.
[2] *Economic Journal*, June 1899, p. 166.
[3] *Industrial and Commercial History of England* (Thorold Rogers), p. 134.

may be fairly considered causes of horizontal combinations in England are the desire and attempts on the part of the combining firms to secure the various "economies of combination," and also a greater control over their workmen.[1]

However, these can hardly be termed "general" causes which are operative in the case of every form of horizontal combination. They seem to be rather causes which apply only to particular forms. Thus it is clear that a temporary combination cannot greatly increase the control of the combining firms over their workpeople; they hardly ensure the control of the central organization over the combining firms. These only combine for certain purposes, at most the joint regulation of output and prices and the elimination of mutual competition in distribution. The appearance of labour troubles and strikes with some firms might often result to the advantage of other firms by putting more trade at their disposal. Only in special cases where the terms of agreement definitely include reference to joint action against Labour does temporary combination involve any increased power to control employees.

With the case of permanent combination it is different. If the men at any establishment within an amalgamation threaten a strike, the management can close it and transfer the work to others. Also, the consolidation of many establishments, with the resulting concentration of large capital in one hand, "gives the combination a backbone of resistance or of aggressive power in dealing with such situations that is not possessed, and cannot well be possessed, by any single establishment which forms but one of a group of competitors." The solidarity of interests among the employers is more complete. The possibility of securing this power and this element of security for continuous manufacturing work has in several instances been stated

[1] *U.S. Industrial Commission Reports*, Vol. xviii, pp. 15–18.

to be a contributing cause making for the formation of English amalgamations.[1]

It might be objected that a strong trade union would call out the workmen in every works of the combine; yet even then the "bargaining power" of the employers is strengthened enormously. Where the amalgamation in an industry is complete in its control, it is found that its power makes the workmen more tractable and less aggressive. In any case the combination of Labour can be better met by the combination of Capital.

So also the "economies of combination" and the savings of "economic wastes" can only be secured to the fullest degree by an amalgamation. The "hybrid" sales association, it is true, can secure some of the economies of distribution or competing power. The permanent central organization wholly controls the distributive functions; it can, therefore, avoid and save the costs of advertising, of sending out unnecessary travellers, of cross freights, etc. The associations which are purely temporary and lack even this permanent element cannot secure any such savings. Thus their formation and development is not appreciably influenced by the motive of securing economies of combination. Their primary motive is the elimination of competition in distribution and the joint regulation of output, prices, and trading conditions in general by means of temporary combination.

The "amalgamation," however, can secure to the full the advantages and "economies of combination" both as to productive and distributive power. It can organize distribution so as to absorb the savings of "economic wastes," which are very considerable when the majority of the firms in an industry are included in a combination. In production, also, large economies are possible, *e. g.* in the purchase and transport of raw materials, in the specialization of plant, skill, and equipment, the exten-

[1] Cp. *U.S. Industrial Commission Reports*, Vol. xviii, p. 17.

sion of the use of valuable patents, improved machinery, etc. Admitting that there is a tendency to over-estimate the extent of these economies,[1] a perusal of the prospectuses and reports of some of the chief "trust" amalgamations in England shows that the directors and organizers consider the prospective economies of no small importance as a means of favouring their successful formation. In varying terms they all refer to the "economies that must ensue from the centralization of production, administration, and distribution," "the material increases of profit due to economies in the costs of production."

Of course, the possibilities of securing economies, and also the extent to which these have been realized in practice, vary with the circumstances of the different industries. This will be seen when the "trust" amalgamations are considered in this connection.

However, a general estimate of the position seems to support the view that the economies which a combination can secure through the better organization of production and distribution may be fairly recognized as an objective of the horizontal combinations in England, subject to the qualifications indicated earlier. These apply to the formation and development of permanent combinations, and also to those of the "hybrid" and the purely temporary associations.

It may be noted, also, that since about 1897–8 "outside promoters"—men not actually engaged in the enterprises which combine—have influenced the development of permanent combination very considerably. As will be seen later, these promoters are frequently chartered accountants who have helped very largely in bringing about some of the amalgamations formed since 1897.[2] When the producing firms would probably not have taken the initiative, it is said that the promoter

[1] The Estimate of Advantages and Disadvantages of Combination.—*Trusts, Pools, and Corporations*, pp. 450–61.

[2] Cp. *infra*, pp. 322–24.

has entered the field, carried on negotiations between the rival firms, and "engineered" the combinations. In the case of permanent combinations this outside or "professional" promotion may be fairly recognized as a "contributory" cause of horizontal combination in England, although the system has not been abused as was the case in the United States.

The foregoing section, though by no means exhaustive, may have served to indicate some of the more important "internal" conditions which have contributed to produce the necessity or desire for horizontal combinations, in whatever direction the development has proceeded. As will be seen, other circumstances operate in the same direction; the success of combinations in one sphere tends to make it desired or attempted in other spheres. English business men have imitated the example of Americans. The success of the "Coats Combine" in the thread industry gave a special impetus to combinations in other branches of the textile industries.[1] The firms engaged in the various branches of industry have been tending more and more to recognize their common interests generally, and to desire union against common enemies. Capital is also tending to combine against Labour, producers against consumers and rival interests. Organization and combination are tending to become synonymous terms for expressing one of the chief modern requirements.

It will be noted that as regards the causes of horizontal combination referred to above there is a conspicuous absence of "artificial" causes, such as are to be found in the corresponding movements in U.S.A. or in Germany—protective tariffs, discrimination in railway rates, speculative promotion, etc., in U.S.A.; protective tariffs, company legislation, pressure of bankers, in Germany.

The causes underlying the movement in England

[1] Cp. *infra*, p. 321.

might be considered as being more natural or "normal." The movement, therefore, seems essentially a natural development of new methods of industrial organization destined to check what has been termed the normal operation of the competitive system in modern industry.

In England, horizontal combinations lack the stimulating and fostering influence of protective tariffs. For not only are they "external" conditions which assist the operation of an industrial combination (foreign competition is checked by them), they are also "internal" conditions which tend to create the necessity or desire for horizontal combination. The home industries are unduly fostered, too many firms are attracted to them, and competition tends to become excessive so that combination becomes necessary in order to save the situation. Moreover, tariffs are said to exercise an "indirect" influence, especially upon English industry, which is carried on under the Free Trade system, and which formerly constituted "the manufactory for the world." The closing of foreign markets has narrowed the range of our market areas, or, as Dr. Grunzel expresses it, "has, of recent years, tended to force the industry and trade of England into a laager." [1] Admitting that this has been neutralized very considerably by the enterprise of English firms in opening up new markets, it is still found in practice that the home industries can be seriously dislocated from time to time; and the intensity of competition may be greatly increased by the above circumstances. This is the natural result of narrowing the market of an industry, and it tends to make the firms operating within the industry desirous of establishing some form of combination in order to regulate their internecine competition. Thus in the tinplate trade of South Wales the immediate effects of the McKinley tariff were so severely felt that even in this trade, where competitors were so numerous, varied in

[1] *Über Kartelle*, p. 317.

circumstances, and so jealous of each other, a joint Manufacturing Board of Control was set up early in 1895 in order to restrict output and thereby control prices, if possible.

This was an attempt to regulate the competition of home firms which had become disastrous through the influence of foreign tariffs.

In a general estimate of the position there seems no doubt but that the protective tariffs of other countries may exercise an "indirect" influence in narrowing the markets of various English industries, and thus in intensifying the difficulties and competition of the firms engaged within them.

However, this comparative review of the causes of combination in England must be further considered later in connection with the permanent combinations—the amalgamations—especially in comparison with the position in U.S.A. For England, instead of following the lead of European nations, has followed rather that of the United States, so that the formation of the permanent combinations is the most important. This will be seen to be largely on account of national conditions.

The movement towards horizontal combination seems to arise largely on account of the operation of the circumstances indicated above. The central motives underlying every form and development arise from the desire or necessity to eliminate mutual competition, and as far as possible regulate output and prices by means of common action. Yet these aims are not always realized in the fullest or even in equal degree in every case. The possibility of even establishing a combination of the enterprises in any industry varies according to the special circumstances of the industry; even more so as regards the possibility of ensuring the successful development and effective operation of a combination after it has been duly formed. However, in both cases, as regards the establishment and the successful development of a horizontal combination subsequently, the

"determinant" conditions are in the main alike in character. Thus they may be studied together, and although isolated temporarily for the purposes of study, it must be remembered that these "external" conditions are always intricately interwoven in practice and modified by various circumstances.

It has been seen how the intensity of competition and the necessity for combination increase, according as the firms in an industry become fewer and stronger, as the result of the centralization of industry, and the elimination of the weakest firms. But as the necessity for combination increases, the existing firms will tend more and more to be ready to combine. Also, it is obvious that the work of negotiation between them will be greatly facilitated in proportion as their number decreases.

1. Thus it seems right to conclude that horizontal combinations will be formed more easily and more readily when the rival firms in an industry are comparatively few in number. Naturally, it is quite impossible to determine, absolutely, any numerical limits. These will depend upon a variety of other circumstances, *e. g.* upon the position of the industry in question as regards the extent of its markets, the demand for its products, the existence or lack of other conditions favourable to combination schemes. Yet it seems possible to state as a general proposition that the more the conditions of an industry constitute favourable "external" conditions of combination, the larger the number of firms between which horizontal combinations can be easily negotiated and established. On the other hand, where there is an absence of favourable conditions, then combinations can be formed between a large number of firms only with difficulty. For example, as regards the working of the Kartell system in Germany it is surprising to find how numerous are the firms which are parties to various combinations. They have been successfully established in industries wherein the enterprises were surprisingly numerous. In many cases they number 40 to 50, and

in some cases have reached 100. In one case—the Sugar Kartelle—there were said to be 250 members.

More remarkable still is the fact that it is found that even where the members of the Kartells are so numerous, their effectiveness, the control of the central bureau over the members and the trade generally, may nevertheless be very complete indeed.

Now it seems to be almost out of the question for horizontal combinations, temporary in character, even to be formed in England, much less to develop successfully, unless the existing firms in a trade are far less numerous. In fact, speaking generally, only in instances of permanent combinations do the number of firms combining exceed some thirty or so. Among the temporary combinations there are few clear instances of effective horizontal combinations where the parties to it exceed a dozen or so. In the case of the "hybrid" development, this condition as to the limitation of the number of the firms seems to be even more essential for the success and effectiveness of the "sales associations." Thus several conclusions seem possible: (1) The number of firms between which a combination can be easily formed is not *absolutely* fixed; it also depends upon or varies with the attendant circumstances in an industry. Similarly as regards the number of firms which determine the effectiveness of a horizontal combination once it is formed. (2) In Germany, horizontal combinations seem able to arise and develop successfully between a greater number of firms than is the case in England. Thus the condition as to the number of the firms would also seem to be influenced by some "national" conditions, which are present and operative within industry in Germany, but lacking in England. It seems probable that these national conditions include: (*a*) the existence of protective tariffs which check the blighting influence of foreign competition; (*b*) the natural facility of the Germans for organization, increased possibly by their military and technical training, and national tempera-

ment; (*c*) the favourable attitude of German law, which does so much to ensure the legal standing of the Kartells by the recognition and enforcement of their agreements. The influence of the last factor is extremely important, for it seems probable that it has contributed largely to mould the development of horizontal combination in Germany.

Another general conclusion which seems possible is that in England, when the enterprises in an industry are numerous, permanent combinations can be formed more easily than temporary combinations. As is indicated by the list appended to Chapter I, the horizontal amalgamations contain a varying number of firms. Some were formed from the fusion of many firms, varying in size and circumstances; others were formed by the combination of a few strong firms. On the other hand, speaking generally, in the vertical amalgamations the firms are, and must be, few in number. Again, in the case of the permanent combinations, the fact that there is a comparatively large number of firms does not prove so serious a barrier to the successful operation of the combination, *ceteris paribus*, as in the case of the temporary combinations; the qualification that other conditions are much alike in either case is, of course, very important. Thus, in the Bradford Dyers' Association the firms numbered 22; the Fine Cotton Spinners', Ltd., amalgamated 31 firms; the Wallpaper Manufacturers was formed from about 30 firms; the Bleachers' Association from 53 firms. Yet these amalgamations are among the strongest and most successful in England. The important point is that once the permanent combination has been formed, the constituent firms are one for all time and purposes.

Of course, it must be readily admitted that where the firms are fewer, even in the case of permanent combination, the possibilities of successful formation and development increase *pari passu*. But as regards the temporary combinations, it seems essential both for their formation and successful operation that the enterprises

should be comparatively few in number. When they are numerous they are usually also varied in size, strength, and general circumstances. Thus it will be difficult for them to arrive at any satisfactory basis of agreement. There is no sacrifice of independence, no complete merging of functions, and consequently a multitude of problems have to be discussed. "Allowances" must be made for weaker firms, and privileges or compensation granted to strong firms; a great variety of circumstances have to be taken into account. These difficulties make it practically impossible for a satisfactory basis to be determined upon, unless the firms which are parties to the negotiations are comparatively few in number. But temporary combinations are essentially organizations founded upon a mutual agreement or contract, the articles of which are vitally important. Thus at the very outset there arises a check even to the formation of such combinations, unless the firms in an industry are comparatively few in number.

In the permanent combinations this difficulty is not so pronounced. The firms unite for all purposes; no articles of agreement are required by which the independent rights and functions reserved to the combining firms are to be so jealously hedged around, as is necessary in the temporary combinations. The essential point is to agree on the terms of sale, the respective shares of the member firms in the amalgamation's stock, the composition of the directorate, and the general points relating to business organization.

Again, the temporary combination has no corporate existence and no easily recognized legal standing in England. Its agreements, even when satisfactorily determined, are not legally enforceable and binding. At best the organization is very diffuse, and the control of the management over the members not wholly satisfactory. When the members are very numerous it becomes exceedingly difficult to ensure the faithful observance of agreements, or to enforce the decisions

of the central management upon all the members. Unless these requirements are fulfilled the object of the combination is defeated, for its operation cannot then prove effective either to eliminate competition or to regulate prices.

The latter difficulties do not arise in the amalgamation so as to endanger its effectiveness. The combining firms give up their individual identity for all time and all purposes. However numerous they may have been previous to their amalgamation, after this has been effected they are one company through and through, which is fully controlled by one absolute central management. Consequently, the number of the firms which go to make up the amalgamation has little influence upon its effectiveness, once it is established. As will be seen later, speaking generally the really effective temporary combinations in England are those found in industries where the existing firms, parties to the agreements, are comparatively few in number. On the other hand, it is noticeable that some of the most successful trust amalgamations were formed from a comparatively large number of firms.

It may be seen from the above, in some measure, how the number of the existing firms in an industry influences or "determines" the possibility of successfully forming and developing a horizontal combination between them. It is seen that no "absolute" numerical limits can be assigned, but rather that the question is considerably influenced by attendant and relative circumstances. Yet, within the qualifications indicated, one may conclude generally that both the formation and development of any form of horizontal combination are likely to be greatly facilitated when the firms in the industry in question are comparatively few in number. Moreover, it appears that in England, where fostering conditions of an artificial character, like protective tariffs, discrimination in railway rates, etc., are lacking, it is all the more necessary that the existing firms should be few

in number in order to ensure the success of a combination. For even in the English amalgamations the average number of firms which combine effectively falls below the average forming the Kartells in Germany. In the former, too, the resulting fusions were not at first especially successful in some cases; *e. g.* where the necessity of conciliating a large number of firms with conflicting interests resulted in the combines having to start operations heavily handicapped in the matter of capitalization or management, through the exacting stipulations of vendor firms.

Yet, apart from a few exceptions among the English amalgamations, it seems clear, both on a priori grounds and from actual practice, that both the formation and operation even of permanent combinations are facilitated when the existing firms in the industry concerned are few in number. The modifications pointed out also furnish an indication of a circumstance which sometimes influences the development of horizontal combination in the direction of permanent as against temporary formations.

It is interesting to notice that the increasing centralization of industry referred to earlier not only increases the intensity of competition and the necessity for combination, but it also tends to increase the possibility of forming a combination successfully. For the centralizing processes constantly tend to reduce the number of the existing firms, and thus a mutually profitable combination becomes more practicable.

2. The above condition refers mainly to the position of an industry with regard to *existing* competition and the number of firms actually existing and competing for trade in an industry. It was found to be important as regards the formation and also the subsequent development of a horizontal combination.

Equally important is the position of an industry as regards *potential* competition and the possibility of "potential" competition becoming "actual." Although

it is clear that the effective "operation" of horizontal combinations as a means of regulating prices is most directly determined by this condition, yet it also influences their "formation." For firms never decide even to form a combination until they have weighed up the prospects of its successful operation and development subsequently. In practice it is hardly possible to separate the two aspects, since horizontal combinations are not "speculative" but "organized" attempts to regulate industry continuously.

The influence of "potential" competition seems to arise from three main sources in its relation to the possibilities of horizontal combination in any sphere of English industry, viz. (*a*) from existing firms in foreign countries; (*b*) from existing firms in England which are outside the combination; (*c*) from the establishment of new firms in England or elsewhere.

(*a*) In the absence of protective tariffs in England there is no "artificial" barrier to prevent potential competition from abroad becoming actual, should the combined home firms attempt to raise prices too high. Such protection against foreign competition can arise only on account of some special circumstances, which are really "normal" conditions of the English industries concerned. They are essentially peculiar national conditions, which give to the firms in some industries a measure of immunity from foreign competition. They may be "natural" conditions, *e. g.* the climatic advantages of Lancashire for fine spinning; the proximity of the firms in the bleaching and dyeing industries to plentiful and suitable supplies of skilled labour, cheap machinery, and water; of the firms making cement to vast supplies of lime, chalk, and coke, and to excellent transport facilities and the London market; of firms making heavy steel, plates, etc., to raw materials and shipbuilding centres—this latter circumstance gives the home firms a considerable protective advantage owing to the heavy freight charges on foreign materials. In other

industries such advantages—differential or protective—arise on account of "traditional" circumstances: the generations of skilled textile workers in Lancashire and Yorkshire, of tin-plate workers in South Wales. Such conditions as these, utilized with grit and enterprise, have helped English firms to produce goods of such quality, relative to their prices, that they not only secure the home markets, but dominate the world's market, even in spite of tariffs in some cases, for certain classes of products. The firms in an industry may also be favoured by a "differential" advantage derived from the possession of privileged supplies of raw materials, *e. g.* as in the production of anthracite and steam coal in South Wales, or from the control of patent processes or manufacturing rights and designs, as in the chemical, dyeing, bleaching, and calico-printing industries.

(*b*) The dangers of the potential competition of firms existing within England but outside the combination can only be wholly avoided when all the leading firms in the home industry are parties to the combination schemes; or when the combination is strong enough to force the "outsiders" out of the market unless they agree to the combination schemes. This in turn varies according to other circumstances, as, for example, the power of the combined firms, or the extent to which the firms in the industry have been compelled to realize the necessity of combining for self-preservation; this is influenced by the degree to which competition has become excessive and disastrous. When the firms are few and alike in strength and resources, the advantages of combination are more apparent and alluring, and also the effects of competition more disastrous.

When firms stubbornly remain aloof from a combination, their ability to hamper its action also depends, of course, upon the strength of their position and any peculiar advantages they may possess.

(*c*) More important still is the possibility of potential competition becoming actual through the establishment

of new firms in England. The protective or "differential" advantages of existing firms, whether independent enterprises or combines, in this respect really arise from somewhat similar sources as do those which create "differential" advantages tending to prevent foreign competition from becoming actual. Some of them are extremely technical in character, and cannot be taken in full detail until actual instances of combination are examined.[1] Typical instances are afforded by the bleaching and dyeing industries. Here the existing firms have rights over the supplies of water of a suitable character, and old-established privileges to pollute the streams with their waste products. These privileges cannot be reproduced without great difficulty, and thus an effective check is placed upon the establishment of new firms. Further, most bleaching and dyeing work is done on commission by firms who have old-established connections with the merchants for whom they work, and whose proximity keeps transport costs at a minimum. These merchants hesitate to entrust work to new-comers, and thus a further check is placed upon the establishment of new firms. Again, the dyeing trade is exceedingly technical; managers, skilled workers, and chemists, trained by experience and tradition, possess exceptional skill in the art of dyeing, the mixing of dyes, invention of special shades, and in carrying on the various processes.[2] Many of the dyes used are exceedingly expensive; existing firms possess patent processes and designs, etc., which facilitate production. New firms could not easily secure the necessary skill, and their products could not compete with old-established "marks." Thus, when the firms in the various sections of the dyeing industry united together, they became largely immune from competition arising from the establishment of new enterprises. The circumstances

[1] *Infra*, Chap. vi.

[2] Cp. Prospectuses of the Bleaching and Dyeing Amalgamations.—*U.S. Industrial Commission Reports*, Vol. XVIII, Appendices, Part I.

check the possibility of new and effective competitors arising even in the vicinity of existing firms. To set them up elsewhere involves the further difficulty of transporting materials cheaply between the various firms.

It will be seen later in greater detail that the possibility of a combination of existing firms being "negatived" by the growth of new firms depends largely upon what are really technical conditions of production and distribution within the industry concerned. In some industries these are such that the existing firms occupy a quasi-monopolistic position, which also places a check upon what has been termed their "capacity for multiplying." Potential competition cannot easily become actual; consequently there exists an "external" condition which is highly favourable to the operation of a combination of the existing firms, particularly when most combine. Of course, these firms realize this, for "positions of monopoly" are frequently referred to in the various amalgamation prospectuses. They present a considerable inducement for the formation of combinations.

As will be seen, these circumstances are so important that combinations of existing firms may sometimes be able to exercise powers which are "appreciably monopolistic" in character.

On the other hand, it will be found that where no such "differential advantages" exist, the power of a combination of existing firms is continually endangered by the prospect of new firms being established.

As was pointed out earlier, the increasing size of the representative firm, and the immense aggregation of capital requisite in some industries in order for a producing unit to be fully efficient, tend of themselves to make the establishment of new firms more difficult. The initial capital cannot be easily obtained. This is especially so in industries which necessitate large investments of capital in a fixed form, *e. g.* in the heavy steel

trade or in the chemical industries, where plant becomes out-of-date very quickly, and large outlays are constantly required for improvements. This fact adds greatly to the various difficulties indicated already.

On the other hand, where the capital required is small, new firms will tend to be established should a combination of existing firms seek to raise prices unduly. The existing firms are well aware of this, and are the more loth to combine.

In those trades in which the existing firms secured a special market owing to the reputation of their products —*e. g.* the cottons and threads of firms like Messrs. Chadwick, Coats, or Brook; the yarns and fine counts of the firms engaged in fine cotton spinning and doubling previous to 1898—they were more able to combine with a view to regulating prices by mutual action with the less fear of potential competition becoming actual through the rise of new firms.

The foregoing sections do not comprise an exhaustive list of the varied conditions which place a check upon the influence of potential competition, in its relation to the possibilities of combinations between existing firms so as to eliminate competition and, if possible, to regulate prices. They serve rather as typical instances which can only be seen in full operation by reference to actual instances.[1]

3. Again, the possibility of realizing proposed combinations in actual practice depends largely upon the "degree of similarity" existing between the competing firms in an industry. This may refer to similarity (*a*) in producing and competing strength; (*b*) in the nature of their products; and also (*c*) in their general circumstances.

(*a*) Combination is frequently desired by firms when they realize that they are so evenly matched that the struggle between them cannot be decisively terminated. When the firms in an industry are much alike in equip-

[1] Cp. *infra*, Chaps. v, vi.

ment, resources, and competing strength, the result of their competition is a general depression. In the "great industries" the firms are usually much alike in these respects; consequently their rivalry is all the more internecine, and the advantages of combined action become all the more apparent and desirable. In such a case combination will be all the more readily agreed to by them, since they all stand to lose greatly by competition. A very good instance is the case of the thread and sewing cotton industry, in which four large firms were all so well established that their rivalry was simply tending to become internecine in character.

When the firms are much alike, they are usually very strong also, since they are the "fittest survivors" of the eliminating process of competition. The possibility of regulating an industry is greatly increased under such circumstances.

However, it is necessary to observe some distinction here in applying this condition according to the direction of development followed by the combination. For it seems to apply less strictly to the development of permanent combination than to that of temporary combination. In the latter case it seems more necessary for their effective formation and development that the firms in an industry should be as much alike in strength as possible. Otherwise, strong firms will naturally stand aloof; they can maintain their position without the help of their weaker brethren. They will prefer to go on with the struggle until the weak firms drop out naturally; combination will appear distasteful to them. Why should they protect the smaller firms by an alliance, when their strength would enable them to oust such firms from the open market by undercutting?

Before a satisfactory agreement can be decided upon, various allowances and compensatory conditions have to be granted to the strongest firms. But, of course, all consider themselves such, and only with difficulty can some basis of agreement be "patched up" between

them. Assuming that the difficult stage of formation is successfully negotiated, each of the firms considers that it has a special grievance. The strong ones think they have not secured sufficient allowances and privileges in proportion to their strength; the smaller firms are indignant, because they consider that their position has been under-estimated, and that their shares of the output or of profits are ridiculously small. Thus they resolve to right their wrongs by secretly evading the agreements—an easy matter, since the latter are not legally enforceable, or effectively sanctioned by legal guarantees and penalties. The strong firms chafe against the restraints and withdraw their support, with the result that the combination collapses. It appears that the effective temporary combinations are those formed in industries where the firms are much alike in strength as well as few in number and protected against existing and potential competition. Similarly with the development of the hybrid associations, though perhaps to a somewhat less degree, since the permanent element within them tends to neutralize the influence of the first condition.

In the amalgamations, however, we find that strong and weak firms alike have been included in very effective organizations. It is often necessary that the small firms should be included in order to make the combination as complete as possible. Otherwise their exclusion might subsequently prove a source of constant irritation and trouble. For the strength of the fusion would not be at the maximum. Also, once the fusion is formed, the distinction between strong and weak firms no longer exists; they now comprise *one* firm. Thus it is found upon investigation that in many amalgamations the weak and sometimes inefficient firms have been included (the promoters consider that it is an unavoidable necessity), though their establishments have been closed subsequently in some cases. However, with these modifications it can be generally

concluded that the formation, and also the effective operation of a horizontal combination will be facilitated according as the firms in an industry are alike in strength. Yet it seems unwise to establish any absolute rule applying alike to every case of permanent, hybrid, or temporary formations.

(*b*) It may be definitely stated that almost in every case horizontal combinations can be formed and developed between firms more easily when their products are similar in character. This has been shown to be particularly the case in the United States.[1] It is true also in the case of England. Industrial combinations have arisen most easily and extensively in industries where there is uniformity in the products, and where they are dealt with in large quantities of standard qualities, sizes, and grades. "Combination implies standardization," and its development has been facilitated where there has existed uniformity in the products of the various firms in an industry, *e. g.* piece cloth dyeing, cotton bleaching, rolling of steel products, making of heavy steel, salt, cements, fine spinning and doubling, distillation of methylated spirits, etc.

(*c*) The third feature of similarity refers largely to the geographical location of an industry and the firms engaged within it. When an industry is concentrated in certain localities the firms engaged within it are usually much alike in general circumstances. Generally speaking, the same opportunities and facilities are available to them all. They may also possess in common "local advantages," as compared with firms in other localities. A feeling of community tends to grow up between them. They more easily recognize their common interests and realize the necessity of utilizing their common advantages to the full by means of common action. Local trade organizations are often formed for general purposes, and they tend to develop into stronger organizations.

[1] Cp. *The Trust Problem* (Jenks), p. 14.

In the case of the temporary combinations it seems all the more essential that this condition should be fulfilled if the combination is to prove thoroughly effective. The more scattered the firms the more varied their general circumstances, and thus the greater is the difficulty of arriving at a satisfactory basis of agreement, since so many allowances have to be made.

At best, the organization of the temporary combination is very diffuse, and the control of the management over the members very doubtful so far as the detection and punishment of breaches of the agreement is concerned. When, in addition, the members are scattered in location, these defects are aggravated and centralized regulation is most difficult and unsatisfactory. When they are in close proximity one member can more easily keep an eye on his fellow-members to see if they are keeping the law, and not secretly evading their agreements; moreover, the central management, in spite of the diffuse organization of temporary combinations, can keep more in touch with the members so as to act quickly and decisively as circumstances vary. An indication of the influence of this condition comes from the fact that some of the most effective temporary combinations are local in structure. Only in certain cases where other conditions are very favourable do they seem to prove effective and satisfactory when formed between firms which are scattered in location. This condition does not seem to apply so strongly to the case of the "hybrid" associations, yet it will be seen that some of the earliest and most successful permanent combinations have arisen in industries where the firms have been in the closest proximity, *e. g.* bleaching; Bradford dyeing; cement making; fine cotton spinning and doubling, calico-printing.[1]

Of course, proximity as to location is not in itself sufficient to lead to horizontal combination, temporary, hybrid, or permanent; this operates jointly with other

[1] Cp. *U.S. Industrial Commission Reports*, Vol. xviii, pp. 39–66.

conditions. One of the most localized of industries, the tin-plate industry, which is practically concentrated in South Wales, has so far seemed proof against any real effective horizontal combinations. Some isolated attempts have been made (*e. g.* in 1894–5) to unite the various firms in a temporary combination but without any permanent success. As may be emphasized later, this industry is a stronghold of the competitive or "individualistic" organization of industry, on account of the presence of other conditions which are quite unfavourable to the development of horizontal combinations.

It should be noted that the increase in the means of rapid communication, the improvements in transport and business organization, all tend in the same direction; viz. to decrease the influence of this condition as regards the possibility of forming and carrying on successfully horizontal combination between firms which are separated by distance. Modern invention is operating more and more so as to "annihilate space."

However, the importance of the localization of the firms in an industry as a condition favourable to horizontal combination has been largely due to the community of feeling which has arisen between the firms under such circumstances. Sooner or later the firms must recognize their common interests, and in many industries this assumes a concrete form in local organizations and local trade circulars. These were originally intended to exercise common action for the furtherance of general trade interests, and to oppose any measures or movements which may injure their trade. The structure and sphere of such local associations gradually tend to increase. Thus they have become affiliated in "national" organizations as the Iron and Steel Institute, the national associations of coal-owners, or of millers, shipbuilding and engineering employers' associations; and also the "sphere of operations" of the local organizations increases. For it must be

admitted at once that these organisations are not industrial combinations, since they have no reference to the mutual determination of prices and output. However, such local associations for general trade purposes have in many cases formed nuclei which have developed into some form of industrial combination. The member firms are on an inclined plane; they tend to extend the functions of the local organizations. At any rate, the existence of some form of common organization must show the advantages of common action, and serve as a means of bringing firms together should they desire to unite for the regulation of competition. It really provides valuable facilities for putting proposed combinations into actual operation. For the possibility of forming horizontal combinations depends to a considerable extent upon the actual facilities available for their promotion and establishment.

4. It seems possible to regard these facilities in three aspects, viz. (*a*) the legal aspect; (*b*) the financial aspect; (*c*) the business aspect. These three aspects are very important and must be considered more fully later on.

(*a*) The evidence of the U.S. Industrial Commission is most conclusive as regards the influence of legislation and legal facilities upon the developments exhibited within the general tendency towards industrial combination. "The form which the combinations take in every country seems to be partly a result of the business habits of the country, partly a result of legislation or lack of legislation." [1] These represent determinant conditions which must constantly be taken into account. It has been seen how the non-recognition of terminable combinations by law in England, as is also the case in U.S.A. and France,[2] has hampered their development and given an impulse to the development of permanent combinations in England and the United States. How-

[1] *U.S. Industrial Commission Reports*, Vol. xviii, Introduction and Summary, p. 8.

[2] *Ibid.*, *passim*, "Legislation"—France, Germany, etc.

ever, in England the requirements of English Company Law with regard to publicity, promotion, capitalization, responsibilities of directors, etc., have tended to keep back the "professional" outside promoter save for legitimate purposes. Granting that these may greatly abuse their position, as in the United States in particular, their function is nevertheless often a very necessary one. In England the legal responsibilities have tended to keep back would-be promoters of amalgamations, while the negative attitude of the law has tended to make the development of temporary combinations ineffective and unsatisfactory. Consequently, both appear to have been checked to some extent.

(*b*) From a business point of view it seems essential that there should be facilities available for bringing the competing firms together, for carrying on the negotiations between them and effecting the formation of the combination. Although the firms in an industry might be desirous of forming a combination, and conditions might be favourable, it is found in most cases that it is necessary for some individual, or group of individuals acting in concert, to take the initiative. For when firms have been engaged in the keenest rivalry they find it difficult to make any advances with a view to entering into combination with one another. This savours of surrender, and the sacrifice of independence is distasteful to all the firms. This seems to be especially the case in English industries, where so many firms have been long established and possessed a pride in their name and independence. It is difficult to carry on any negotiations without some intermediary, some one must make the first move, preferably an impartial person who is conversant with the industry. He can approach the rival firms in an industry where competition has been keenly felt by all, and by pointing out the advantages which would arise from joint action can negotiate for the formation of a combination. Investigation shows that in the case of most of the amalgamations in Eng-

land this intervention or initiative action by an outside promoter has been necessary for their successful formation.[1] The heads of the various firms are inclined to hold back from any initiative action, the business habits of English firms, the "conservatism" of which has been evident in certain characteristic features of English industry, have tended in the same direction. These, added to the requirements of the law, the responsibilities of promoters, etc., give little opportunity to "speculative promoters." Not until firms of chartered accountants, "familiar with the various lines of business and with business methods," began to undertake the work, was it easy to secure the necessary facilities for negotiating a combination. This took place about 1896–7, and these "outside promoters" occupied a very important place in the amalgamation boom in the textile industries, in particular, about 1897–1900.[2] In most instances the intermediary or promoter represents a firm of chartered accountants.

In the development of temporary combinations the need for an independent outside negotiator is not so great. The interests involved are fewer, the legal responsibilities inconsiderable, the task of organization less difficult. Here the initiative seems to have been usually taken by some leading firms in an industry which have exercised considerable influence on account of their strength and position. Yet even here the character of English business methods and the pride of independence have tended to keep firms from such action until the exigencies of trade absolutely compel some movement towards joint action.

Needless to say, the "outside promoter" seems to have exercised little influence, if any, in these cases. There is no fusion of capitals, no financial negotiations, no purchase price upon which commission is paid to

[1] Cp. *U.S. Industrial Commission Reports*, Vol. xviii, Chap. i, pp. 23–30; Part i, Appendices.

[2] *Ibid.*, Vol. xviii, Part i, p. 23; Part ii, Legislation and Promotion; also *infra*, pp. 322–4.

the promoter. Thus they have not been required to offer their services in order to bring competitors together and effect a combination.

(*c*) This indicates a "financial" aspect of the facilities. In order to establish a permanent amalgamation successfully it is necessary to secure financial support. In many cases the public subscriptions have been called in as in the English fusions. The necessary capital cannot easily be secured unless the prospectus shows that the proposed company has good prospects of success. This, in turn, depends upon the circumstances of the industry and the position of the firms who propose to combine. A large amount of capital is necessary to effect the flotation of the combination.

The terms under which the amalgamation is floated, or "capitalized," the purchase prices which have to be allowed to the various "vendor-firms" before they agree to unite, have an extremely important influence upon the successful development of the amalgamation. When it is "over-capitalized," when too much is paid to various vendor-firms in order to secure their adhesion, the amalgamation is handicapped right from its inception. However favourable the various "external" conditions of combination may be, it is quite certain that the operation of the amalgamation will not be very satisfactory. For it is a company, and no company, be it an amalgamation or an independent firm, can earn profits on inflated or "watered" capital. It is a splendid tribute to the promoters and the firms which carried through the English amalgamations that only in comparatively few instances do they seem to have been over-capitalized. In such cases, although the other conditions were favourable, the defects of over-capitalization proved fatal to success, and called for stringent remedies.[1] Incidentally, this helps to show that the English "trust" amalgamations have arisen

[1] Cp. *The Trust Movement in British Industry*, pp. 172–6.

largely as genuine efforts on the part of rival firms to meet the exigencies of trade, and put an end to their internecine rivalry for the common profit.

Of course, the question of capitalization does not influence the operation of temporary combinations, since they have no corporate existence. Neither is it very important in the case of the hybrid development, since the permanent joint organization is usually a company with small nominal capital of £1000–£10,000, in which the member firms hold shares.

5. Naturally, the successful development of a combination will be considerably affected by the general trade conditions. When trade shows little prospect of improvement rival firms are sometimes more ready to agree to the formation of a permanent combination between them. In the case of the temporary development it seems that a sudden decline in trade sometimes tends to make some members of a temporary association inclined to withdraw or evade their agreements, in the hope that they may snatch some advantage by undercutting and maintaining output. Since it is impracticable to guarantee the observance of these agreements or detect all breaches of it, the adherence of the members is frequently influenced by the conditions of trade. For it is probable that in these associations the members are often tempted to observe the agreements only in so far as trade conditions make it profitable.

In the case of the permanent combinations, their position is also influenced by the trade conditions which follow their establishment, somewhat in the same way as any firm. However, if the combination is "complete," controlling most of the firms in an industry, protected against potential competition and facilitated by other favourable "external" conditions, it is clear that it can utilize an improvement in trade and withstand a decline better than independent competing firms.[1] At any rate, in times of depression the position

[1] Cp. the textile fusions during the war depression of 1900–04.

is not aggravated by price cutting and reckless over-production. The management of the amalgamation can adapt its output, prices, and general policy to the contemporary conditions of trade, and also be certain that the policy and decisions will be carried out in all the constituent establishments.

6. However, it seems clear as a result of inquiry that one of the most important conditions determining the effectiveness of a horizontal combination must turn upon the "form of organization" adopted. But it can also be seen that this depends, in turn, upon a variety of other circumstances. In some instances the conditions are such that combinations can be formed more easily in the direction of the temporary development. In other cases development in the direction of permanent combination appears the most favourable and practicable; *e. g.* the firms may be too numerous and too varied to afford much prospect of a temporary combination proving effective. In other cases the conditions of the industry may seem so favourable that a permanent combination would give the existing firms a practical monopoly. The variety of conditions that have to be taken into consideration, the intentions of the organizers, and the attitude of the various firms make it necessary to consider according to actual cases, almost individually, the circumstances influencing combination proposals in all the various directions and spheres of industry. However, it has already been seen that the temporary, if arbitrary, isolation of the three directions of development helps to facilitate any investigation.

Thus it is impossible to regard the foregoing sections as a complete or exhaustive account of the circumstances which determine the possibility of establishing "effective" horizontal combinations. The conditions indicated seem the most fundamental and typical, and may serve as the governing principles for the subsequent inquiry into actual instances of combination.

Similarly, the desire to avoid the effects of "exces-

sive competition" is no doubt the fundamental motive which leads firms to combine. Yet it is not the only motive, nor does it operate uniformly in every industry. Sometimes its operation is intensified by the peculiar conditions of a trade, *e. g.* the migration of iron and steel works towards the seaboard has tended to intensify the pressure of competition upon the firms making certain classes of iron and steel goods in the Midlands; the latter are placed at a disadvantage. Moreover, these trades are particularly vulnerable to foreign competition, which also tends further to intensify the pressure or intensity of home competition within them.

Only by reference to actual cases is it possible satisfactorily to estimate or indicate the influence of the "internal" or "external" conditions as causes or as determinant circumstances of horizontal combination respectively. It is impossible to include in this survey the whole range of industrial combinations in every sphere of industry, consequently typical instances must be taken from the various industries considered.

But it has also been seen how the various "external" conditions of combination are intricately involved and interwoven in actual practice. The fact that the firms are localized does not alone determine the possibility of combination; neither is it impossible to establish an effective combination unless the firms are few in number and alike in strength and general circumstances. The direction of development has to be taken into consideration, and the nature of other attendant circumstances are sure to exercise a modifying influence. Take the case of the coal trade at the time of the formation of the Vend. Various authorities show that the collieries were neither alike in size, circumstances, nor in the nature of their coals. Some produced inferior qualities, others produced the best coal; some of the mines were large and produced a considerable output, others accounted only for small portions. They were also fairly numerous, since Archer, writing of the seven-

teenth century, shows that the number of colliery owners was very considerable even then. This conclusion was supported by Matthias Dunn, 1844, who refers to the surplus of productive capacity. Yet other circumstances were so favourable that the collieries in the northern coalfield held many monopolistic advantages, *e. g.* their contiguity to the seaboard for transport facilities, the negligible competition from other coalfields, the advanced development of the northern coalfield, and control of the London market. It was conditions like these that facilitated the regulation of the Vend for so long a period by firms which were comparatively numerous and varied. When new industrial and commercial developments neutralized and destroyed these "differential" or monopolistic advantages, the Vend of Newcastle soon fell to pieces. It may be more than a coincidence that a period of rapid growth for the development of a national railway system was 1838–43, and that the last period of the regulation of the Vend synchronizes with these years.

The various conditions which have been indicated above operate mutually and jointly in actual practice, although they may be temporarily isolated for the purposes of inquiry. Moreover, they seem to present different aspects according to the point of view taken; *e. g.* the centralization of industry tends to increase the size of firms and to make competition more intense. It is thus an "internal" condition which tends to create the desire and necessity for combination to restrict competition. From another point of view it is a condition which determines the possibility of establishing an effective combination, *i. e.* an "external" condition. For it tends to reduce the number of the existing firms and to make them more uniform in size; moreover, by increasing the size of the average firm it tends to make it more difficult for new firms to be established.

Reviewing the position generally, it seems that the influence of one circumstance is modified by that of

other circumstances. Jointly and mutually, not singly or serially, the various conditions indicated above seem to determine the necessity for and the possibility of establishing effective horizontal combinations.

For example, as far back as 1896 the degree to which the steam coal industry of South Wales had become centralized and concentrated was pointed out. Thirty companies produced ninety per cent. of the total output, fifty produced ninety-five per cent., and twenty companies produced about eighty per cent. of the total output.[1] The industry is exceedingly localized, the firms are in close proximity and producing a class of coal that is unrivalled all over the world. Naturally, it was pointed out that there were many conditions extremely favourable to the formation of a combination in order to end the excessive competition of firms and regulate the trade to their mutual interest and also to the public advantage. Yet the proposals for even a temporary combination were never taken up successfully.

On the other hand, it is interesting to notice that since about 1907 events have shown that the horizontal development in the direction of permanent combination is more practicable.

Such a position can be explained only by reference to the actual conditions of the particular industry, some of which modify the operation of the general conditions of combination indicated earlier. This and similar instances show that the circumstances which ultimately occasion and "determine" the possibility of effective combination and the directions of development most easily and effectively followed, cannot be fully estimated without reference to the technical conditions of the particular industry considered.

However, the "external" conditions already indicated afford valuable generalizations as to the nature of those which determine in a broad and fundamental manner the possibilities of horizontal combination,

[1] Cp. *Some Notes on the Coal Trade*, etc. (D. A. Thomas), p. 29.

although their operation is not altogether without exceptions. By applying these general conditions in conjunction with actual instances of combination three results seem to be obtainable, viz. (*a*) their operation can be illustrated in a concrete form, (*b*) their validity as general determinant principles can be put to the test, and (*c*) one can observe where and how far the special or "peculiar" circumstances of any particular industries necessitate modification and exceptions.

In doing this, it would seem well to consider the three directions of development in turn. Such a method of analysis will not only facilitate inquiry, but will indicate how the various conditions operate and apply in different degrees according to the direction followed by the main development of horizontal combination. Only by means of some degree of temporary isolation does it seem possible to approach the problem.

The whole tendency towards industrial combination and the various developments and formations exhibited within it resemble a skein of threads, tangled and interwoven, yet all the while connected together. To examine the commencement of one line of development it is necessary to take up the end of another. Throughout there is continuous progress and advance, emphasized at some times by striking features of similarity, obscured at others by peculiar exceptions or broad differences.

Of course it is only right to mention the influence of circumstances which determine the demand for a commodity upon the price policy followed by a combination, even when it is monopolistic.[1] In their treatment of the "theory of monopoly" many writers have clearly shown that powers even of a monopolistic combination in the matter of output or prices is by no means unlimited. The influence of demand, time, place, and custom leads to the establishment of conditions which

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[1] Cp. *infra*, Chap. vii.

in a very real sense "determine" the price policy of an industrial combination, even when it is "appreciably monopolistic" in character. However much a combination may secure its control over supply, its influence over demand is strictly limited by a variety of conditions. In many cases the interest of the producer and the consuming public coincide, so that even the monopolistic combination has to mould its price policy accordingly. Thus the "monopoly price" does not always represent "the highest price that can be obtained."

Chapter V

THE DEVELOPMENT OF HORIZONTAL COMBINATION

PART I.—THE FORMATION OF TEMPORARY COMBINATIONS OR ASSOCIATIONS

In the endeavour to apply the determinant conditions tentatively indicated above in conjunction with actual instances of industrial combination and the practical circumstances of various industries, it is necessary to proceed with very great caution. For the various forms of organization and lines of development discernible within the general tendency towards industrial combination have been found to be intricately involved with each other; and this circumstance, of itself, tends greatly to increase the difficulties and danger of isolating them even temporarily. However, for the present inquiry the "temporary combinations" or "associations" must be taken to comprise all combinations of enterprises formed for the attainment of common action for specific objects and specific periods only, according to the terms of the terminable agreements made between the combining enterprises; they comprise those combinations of enterprises which involve no permanent loss of individuality, complete fusion of identity, or surrender of independence on the part of the combining firms.

As was indicated in the introductory chapter, the formation of temporary combinations seems to constitute the only real link of connection existing between the modern movement towards industrial combination and earlier isolated instances of combination to restrict

the operation of competition in industry and commerce. Unlike the development of horizontal combination towards the formation of "hybrid" associations [1] and also of permanent combinations, the tendency towards the formation of temporary combinations can show a long and in some ways direct line of descent. The two former developments seem to be essentially the peculiar products of modern industrial conditions alone. The "amalgamations" do not really become an important development until about 1896; while the subsidiary tendency towards the formation of the "hybrid" combinations is not fully exhibited until an even more recent date—from about 1900. This, of course, allows for the operation of the Central Thread Agency even previous to the amalgamation which constituted Messrs. J. & P. Coats, Ltd., 1896. This "sales agency" developed much more systematically after this time, and some of the most typical "hybrid" associations were established after 1900, *e. g.* The Cable Makers' Association (1906); The North-Western Salt Co. (1906); The Industrial Spirit Supply Co., Ltd. (November, 1907).

However, the tendency towards the formation of temporary combinations seems to go right back to an early period of industrial history as to principle, and oftentimes as to methods also. Thus there is evidence of temporary combination of a fairly systematic character on the part of Tyneside coal-owners to control output and prices as far back as 1600.[2] It has been seen how various instances of temporary combinations are available from a number of directions from this time forward. With regard to modern times, the U.S. Industrial Commission concluded in 1901 that for a very long time there have existed in England terminable agreements of a fairly effective character among

[1] Cp. *infra*, Chap. v, Part ii.

[2] *The Hostmen of Newcastle* (Dendy), Publications of the Surtees Society.

dealers and manufacturers, so as to prevent competition from becoming too severe in the matter of prices and trading conditions generally.[1] This "historical" aspect of the tendency towards the formation of purely temporary combinations indicates a consideration which must be kept in view in the course of the inquiry which is attempted in the present chapter.

Again, it appears to be generally true that the main object of the temporary combinations is the restriction of competition and the regulation of output, prices, or general trading conditions. Speaking generally, their development is not complicated by other considerations, such as the desire of the combining firms deliberately to exploit some monopolistic advantage, or to secure the special "economies of combination." These temporary associations most frequently deal with questions of output and prices only—*e. g.* in the way of fixing minimum prices, maximum outputs, etc.;[2] the chief aim or function is to restrict competition between the combining firms. Thus the effective realization of this aim would appear to depend very largely upon the character of the competition which exists in the various industries. The application of the general conditions indicated earlier will therefore be modified accordingly.

While there has long been a general tendency towards the development of temporary associations, it is at once seen that their effectiveness has varied very considerably. In some industries temporary combinations have been so successful that in some cases they exercise a power which, during certain periods, is "almost as complete as that of a single corporation."[3] In other industries attempts to restrict competition by means of terminable associations show a history of repeated failure. Further, even within different branches of the same industry the temporary associations

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[1] *U.S. Industrial Commission Reports*, Vol. xviii, Part i, Chap. ii, p. 17.
[2] *Ibid.*, Vol. xviii, Chap. ii, pp. 17, 18.
[3] *Ibid.*, Vol. xviii, Chap. ii, p. 18 (*b*).

have met with varying success. With regard to the iron and steel industries, it has been frequently reported that there is hardly a branch of these industries in which the producing units have not been combined under terminable syndicates in order to keep the prices of their products at remunerative levels.[1] The attempts have been general, but their resulting fortunes vary. In some branches they have experienced a chequered and unsuccessful career—*e. g.* pig-iron, tubes, tin-plates, finished iron products; in other branches their endeavours have met with considerable success. Thus it was stated in 1898 that in the rail, ship-plate, boiler-plate, bar-iron, and other branches of the iron and steel trades of Great Britain, agreements or understandings as to prices, representing forms of temporary combination, were in such a degree of operation that prices were fairly well maintained and cutting largely prevented.[2] Investigation shows that there are about half-a-dozen effective associations in these branches of the iron and steel industries, though it is said to be somewhat difficult for the outside public to ascertain accurately where agreements in restraint of competition are operative in the iron and steel trades, or what are the terms of such agreements. Yet it appears that a really effective and systematic regulation of prices has been exercised under certain conditions of trade by about half-a-dozen associations; *e. g.* The Steel-Railmakers' Association; The Midland Marked Bar-iron Association; The Scotch Steel-makers' Association; The Ship-plate and Boiler-plate Associations, and probably the National Galvanized Sheet Association. Generally speaking, the iron and steel trades of Britain, taken as a whole, do not seem to offer the most favourable sphere for the regulation of output and prices by means of horizontal combinations of enterprises. However, there is sufficient evidence to show that the fortunes and effectiveness of

[1] *Tariff Commission Reports*, Vol. iv, *passim*.
[2] *Iron and Coal Trades Review*, December 16, 1898.

temporary associations vary within the different branches of the iron and steel industries.

Similarly, in the textile industries it is found that the regulation of competition in some branches (*e. g.* cotton spinning and weaving, with the exception of fine spinning and doubling), temporary combinations have rarely been attempted; whereas in other branches (*e. g.* bleaching, calico-printing, and woollen cloth dyeing, etc.) the success of temporary associations has furnished the bases for the subsequent formation of permanent combinations.[1] In the manufacture of the coarser qualities of paper the regulation of competition, even by means of temporary agreement, has proved ineffective. On the other hand, the manufacture of wall-papers and fancy papers is firmly controlled by an amalgamation. The varying fortunes of temporary combinations—the simplest form of industrial combination—in the various industries, and even in different branches of the same industry, can only be explained by the fact that the "external conditions" of combinations do not apply similarly within them all. In order to consider the operation or application of these conditions they may be broadly divided into two classes: (1) those conditions which refer directly to the circumstances of the various industries, or of the firms within them; and also (2) those which are connected with the character of the form of organization adopted by the enterprises which combine together.

For temporary combination is the simplest form of industrial combination to regulate competition, and the fortunes of its development must depend mainly upon (*a*) the character of the industries in question and of the firms engaged therein; or (*b*) upon the form of organization adopted in the resultant combination—its defects or strength; or (*c*) upon a combination of these

[1] Cp. *U.S. Industrial Commission Reports*, Vol. xviii, Part i, Appendices, *passim*; *The Trust Movement in British Industry* (H. W. Macrosty), Chaps. v and vi, p. 14.

two sets of circumstances. It is noticeable that these practically cover the whole range of "external conditions" indicated already.

First take the case of the iron and steel industries: As has already been indicated, these industries, taken generally, have proved unfavourable for the development of horizontal combinations able continuously and effectively to restrict competition by regulating output, prices, and trading conditions even in the home markets. The reason is not far to seek, for in this connection it has been stated that whereas the prices in the various iron and steel markets in protectionist countries may be regulated by such combinations within tolerably wide limits, in England these prices must be largely determined by the behaviour of the foreigner. Thus an arrangement made to-day to sell at a certain regulated price may be completely upset to-morrow by the action of an outside country. Although the world's output of and demand for iron and steel is so enormous, the iron and steel markets in Great Britain are so sensitive that large offers of pig-iron and semi-finished steel from abroad below current prices might sometimes overrule the market despite the efforts of home producers.[1] Thus it has been rightly concluded that, under these circumstances, it is difficult to see what benefits horizontal combinations of English producers could be expected to confer in the way of keeping markets from "falling to pieces" in these industries.

This statement seems to indicate the crux of the whole question. The possibility of establishing effective combinations to regulate output and prices even by means of temporary combination, quite apart from any monopolistic intentions, depends first of all upon the position of the various branches of industry as regards foreign competition. This is one of the chief sources of "potential" competition, regarded as a factor which

[1] Cp. *British Industries* (Ashley), pp. 35–7.

constitutes an "external" condition of effective horizontal combination.

It is important to notice that the influence of foreign competition upon the English iron and steel industries is all the more powerful since it is felt directly in some of the home markets to a very considerable degree. Two general conclusions seem possible in this connection—

1. That even the simplest forms of horizontal combination will not long be satisfactory and effective in those branches of the industries which are easily vulnerable to foreign competition.

2. That effective regulation of output, prices, and general trade conditions will only be possible in those branches which are "protected" in some way from foreign competition in the home market, at any rate, on account of some special circumstances found within these branches. For, of course, it cannot arise from any artificial circumstance like protective tariffs. Only in such cases is one of the first requisite or essential conditions of effective combination fulfilled. If this be correct it should be found that those branches wherein effective associations have been developed possess some "differential" or "protective" advantages with respect to foreign competition. Also, *though not necessarily so in every case*, it will usually be found that those branches wherein combinations to restrict competition either have not been established or have not developed successfully are branches which are vulnerable to foreign competition.[1]

Take the branch engaged in the manufacture of ship-plates and boiler-plates, which is largely concentrated in several localities, as the North-east of England, the Glasgow district, and South Wales. The firms engaged within these districts have a practical monopoly of the

[1] Of course this assumes that there are other favourable external conditions operative, since the position of an industry with regard to foreign competition is not the only factor to be taken into consideration. Cp. pp. 212–22 *infra*.

local trade. For they are in convenient proximity to the shipbuilding centres and the chief consumers, and thus at the outset the freight costs of sending foreign plates into their market areas gives them an advantage over foreign competition; for plates are bulky articles, costly to transport. But the firms producing ship-plates have also been long established in most cases, and possess a well-deserved reputation for the excellence of their products. Moreover, the local circumstances of these firms are very favourable, and this tends further to protect them from foreign competition; largely for these reasons the firms are not only favourably situated with regard to foreign competition, but have developed an extensive export trade. This relation of the industry to foreign competition has certainly tended to facilitate the development of effective combinations between the firms engaged within them. Similarly as regards the Midland Marked Bar-iron Association. Marked bar-iron is a speciality manufactured by a small group of firms, each with an old-established reputation for excellence. They command a special market, have old-established trade connections, are in convenient proximity to one another, and are practically unaffected by foreign competition, although somewhat subject to the competition of unmarked bars. In this branch of manufacture local conditions are also very favourable.

The British Rail-makers' Association owed much of its successful development and effectiveness to the fact that foreign competition in the home markets, and also in certain foreign markets, has sometimes been bought off by means of international agreements. Further, steel rails are bulky products, expensive to transport, and thus the freight advantages tell in favour of the home firms. But, in addition, the English firms have always had a practical monopoly of home and colonial markets, and sometimes in countries in which a great deal of railway construction is carried out by means of

English capital. English engineers have specified for rails of English manufacture, since they showed a preference for acid steel, which was not generally produced by foreign firms, who preferred to produce the basic steel readily accepted by their engineers. This is a technical point of more importance than might appear at first sight, and a circumstance which has been considered to give the home firms a certain "differential" or protective advantage. Moreover, the manufacture of steel rails is a branch of these industries in which the English firms have maintained their effectiveness and general position with respect to foreign competitors; thus, so far as this condition is concerned, effective industrial combination is facilitated.

It is interesting to notice that one of the principal sources of home demand for steel is the shipbuilding industry, which has annually absorbed over a million tons of finished plates since 1895. The English home demand for shipbuilding material far exceeds that of any other country. Many countries actually import English plates, although they produce plates themselves. The available statistics show that our exportation of various classes of plates, angles, etc., has been increasing ever since the 'nineties, while the imports are practically negligible. This favourable condition contributes to facilitate the development of effective associations between the firms in those branches manufacturing these products.

The manufacture of sheets of various kinds, especially of galvanized corrugated sheets, is a branch of the iron and steel industries which has developed in a striking fashion of late years. The production and export of galvanized and corrugated sheets has increased in a remarkable manner, and it is frequently stated that the demand actually gains upon the supply available. Thus, as far as foreign competition (so important a factor) is concerned, association of home firms to regulate competition is quite practicable. This fact largely accounted

for the exceptional success of the National Galvanized Sheet-makers' Association, which has maintained prices at uniform levels for long periods together—*e. g.* January 1907 to July 1908 at £12 10*s.* a ton. Its success was so remarkable and well recognized that the collapse of galvanized sheet prices on July 13, 1908, caused some sensation among persons associated with the iron and steel trades. As will be seen, this temporary collapse of its policy was not due to foreign competition but to some unfavourable circumstances of the industry.[1]

It is only possible to give typical instances, but they tend to show that effective temporary combinations have been established only in those branches which are favourably situated with regard to foreign competition. For the position of an industry in this important respect is found to exercise a very powerful influence as an "external" condition determining the fortunes of industrial combinations generally.

Similarly, it appears that effective temporary combinations have not been successfully established in those branches of the iron and steel industries which are so specially and notoriously vulnerable to foreign competition. It is in such that the regulation of competition by means of the horizontal combination of home firms is found to be quite impracticable on any general scale. The only temporary combinations which have been formed with any measure of success therein are local in extent or structure, and also in their sphere of operation, and cannot be said to exercise any decisive, continuous, or general influence upon prices. The latter tend to be so strongly influenced by foreign competition in such branches as the above that this fact, in itself, is sufficient "to knock the bottom out of any possible agreements" between home firms. The contrast with temporary combinations in other branches which are differently

[1] Cp. *The Economic Journal*, December 1909, p. 597.

situated in these respects is striking; *e. g.* the ship-plate and boiler-plate associations, whose "structure" is local but whose "sphere of influence" is national or even international in extent.

Another example is afforded by the branches engaged in the production of semi-finished iron and steel materials generally. It is frequently stated that the home market for these products is without doubt the most vulnerable in the world. The invaders of our home iron and steel markets are said to have less difficulty in finding buyers for semi-finished material than for other more finished products. The statistics of the importation of semi-finished iron and steel products, particularly of rolled products,—like the importation of bars, billets, and blooms into South Wales —furnish evidence of conditions which are almost of themselves sufficient to make any horizontal combination of home firms manufacturing these products, particularly a form of temporary combination, impracticable as a means of regulating output and prices effectively even in the home market. Only in isolated cases, as where the firms produce a special class of products for special markets under favourable conditions, has any such combination proved effective, *e. g.* the manufacture of Midland "marked bar-iron," or of the South Wales Siemens' steel bars.

With regard to the production of pig-iron, it has been said that when Continental or American manufacturers contemplate a raid on British preserves they generally begin with pig-iron.[1] The production of pig-iron in U.S.A. is almost treble that of England ; Germany is also easily ahead. In times of depression foreign makers often seek to work off their surplus production by taking advantage of our Free Trade position. Thus, just at the very periods when combinations of home firms to maintain prices are most desirable, the pressure of foreign competition may tend to make them most

[1] *The Iron Trade* (J. S. Jeans), pp. 129, 141, 157, and *passim*.

impracticable. At most periods the importation of pig-iron is considerable, while prices in the British pig-iron markets are strongly influenced by foreign competition, so that the possibilities of regulating competition by home firms, even when trade is fairly good, are not very great. For should prices take an upward turn as the result of any combined regulation of output or prices, foreign firms might immediately seek to use the opportunity to work off the surplus of their vast outputs by offering pig-iron at lower prices, sometimes below the English costs of production. It is also stated that foreign pig-iron producers are usually on the look-out to take advantage of any upward tendency that may occur in the English markets.

It has also been pointed out that the importation of semi-finished iron and steel presents a further medium through which foreign competition tends to prevent the regulation of pig-iron prices by any combination of home producers. Pig-iron is almost wholly used for further manufacture into finished or semi-finished iron and steel products, that is, apart from the quantity used for foundry purposes. Consequently, any large importation of these products takes away a considerable market for pig-iron. Where English pig-iron producers have been able to regulate prices or output to any considerable degree by means of combinations, the latter are usually local in extent, comprising firms which possess special markets (*e. g.* for "foundry" iron of the best quality) and are much alike in general circumstances. A recent publication, dealing with the position of industrial combination as between the firms producing pig-iron in Germany, is very interesting and significant in this connection. Even in Germany, where protective tariffs are operative and various legal and economic conditions are favourable, the position of the pig-iron syndicates has been by no means satisfactory. It has been concluded that they have been unable continuously to maintain prices, diminish the force of crises effect-

ively and considerably, or allot sales among the members to their general satisfaction ; also that only by watching foreign competition, reconciling differences between "pure" and "mixed" works, reducing the importance of the "pure" works, and by conciliating outsiders can syndicate schemes be effectively established upon a general basis.[1]

Similarly, such conditions tend to prevent effective combination on any general scale between English pig-iron producers unless special circumstances are favourable. Conflict between "pure" and "mixed" works is greatly increased in times of depression, just when stable combination is most desirable. For the "mixed" works divert their whole energy towards pig-iron production for stock until trade revives, and the "pure" firms seek to keep their plant in full blast. It is also said that the small and inefficient firms benefit at the expense of larger firms.

Taking another branch of these industries as a typical example, it is noticed that there is very considerable difficulty in establishing any mutual regulation of output, prices, or trading conditions generally by firms producing some of the more finished products, such as agricultural implements, general machinery and hardware, tools. Of course there are a number of unfavourable circumstances in these industries, but the position can be partly explained by reference to their position as regards foreign competition; for it is found that the enterprises engaged in these branches of iron and steel manufacture are in many ways vulnerable to foreign competition. Of course, there are several other "external" conditions which are unfavourable, as, for example, the number of firms engaged in these branches, their varied sizes and circumstances, the possibilities of establishing new enterprises, and the variety of the products manufactured.

There seems to be no doubt but that it is the some-

[1] *Die deutschen Roheisensyndikate* (August Hillringhaus).

what unfavourable "unprotected" position of many of the branches of the English iron and steel industries with regard to foreign competition, which largely explains the comparative lack of effective horizontal combinations within these industries generally. The above instances and the various statistics which are available seem to justify the conclusion that in such branches of industry "prices must be largely determined by the behaviour of the foreigner. An arrangement made to-day to sell at a certain regulated price may be completely upset to-morrow by the action of an outside country."[1] Moreover, the earlier conclusion of this section seems justified in that the regulation of outputs or prices by means of horizontal combination (even in its simplest form of temporary combination) is only satisfactory and effective in branches which enjoy some differential or protective advantages as regards foreign competition; also, such attempts seem to be quite impracticable unless this essential "external condition" of combination be favourably fulfilled.

The above affords a first indication of the profound influence of our Free Trade system upon the position of the whole of the combination movement in English industry, which will become evident throughout the inquiry. For it appears that foreign competition is usually the chief source of the potential competition which places a check upon combinations in the iron and steel industries in Great Britain; for their relative "national" position, the lack of protective tariffs, the abundant transport facilities for importation from abroad, the strength of foreign firms, etc., all tend to make it possible for this potential competition to become actual upon the slightest inducements. Only where the English firms possess some "differential" or "protective" advantages are effective horizontal combinations practicable.

But the relation of the home industry to foreign

[1] *British Industries* (W. J. Ashley), p. 35.

competition is not the only "determinant" condition of industrial combination; *e. g.* the tin-plate industry has occupied an unrivalled position in home, colonial, and foreign markets, yet attempts to establish even the lowest forms of combination—temporary associations —between the firms engaged within it have been conspicuously unsatisfactory.[1] Thus the recent proposal for a joint restriction of production as between the tin-plate firms in order to work off a glut caused by the Balkan War and American competition in Canada, was not sufficiently supported in order to ensure its satisfactory adoption and application in this industry.[2]

The manufacture of tubes is a branch of the iron and steel industries which is largely exempt from foreign competition in the home market, and commands an export trade which increases at a remarkable rate. Yet the various attempts to form temporary combinations in order to regulate competition among the home firms have lacked a character of stability and continuous effectiveness: for, apart from their relation to foreign competition, various other circumstances operative within the different industries have to be taken into consideration. The "external" conditions of combination indicated earlier determine the possibilities of industrial combination jointly and not singly. What, then, is the position of the instances already referred to as regards the other circumstances of an industry which constitute "external" conditions of combination? A favourable position with respect to foreign competition is not of itself sufficient to make combination of the enterprises within an industry practicable or effective. Yet it can be broadly concluded that where the firms in a branch of industry are favourably situated in this respect, and other external conditions are also favourable, horizontal combinations, whether temporary or permanent, will be practicable and

[1] Cp. p. 214, *infra.*
[2] *The Western Mail*, February 26, 1913.

effective; these seem to be the main determinant conditions.

Thus it appears that the firms manufacturing "marked bar-iron" number only about half-a-dozen, all possessing old-established brands or marks. This places a check upon the "potential" competition which might become "actual" through the establishment of new enterprises. Again, these firms are all situated in the Staffordshire districts, in close proximity to one another; they are also much alike in size, their products are uniform, they contribute to the same markets, and are much similar in general circumstances. The English firms which manufacture steel rails number a little over twenty; of these, however, only a dozen or so are regarded as "regular" producers of rails of all classes. The really "effective" firms producing the ordinary classes of rails may probably be placed at this figure. Moreover, this branch of industry seems to have become concentrated in location as between groups of firms, *e. g.* Messrs. Guest, Keen, & Nettlefolds, Ltd.; the Ebbw Vale Steel, Iron, and Coal Co., Ltd., and the Port Talbot Steel Works, in South Wales; Messrs. Bolckow, Vaughan & Co., the North-Eastern Steel Company, the Cargo Fleet Company, Ltd., and the firms situated in the North-East Coast districts; also the Barrow Hematite Iron Company, and firms on the North-West, and the groups of firms located in the districts of the Midlands, Sheffield, and Glasgow, respectively.

Again, the existing firms are much alike in size and resources, all large and in many cases possessing complete vertical organizations; their markets are also largely alike—colonial, Indian, and home—and they are all affected by much the same circumstances. There is the less to fear from the potential competition of new enterprises, mainly for two reasons—

First, the existing enterprises are strong and large because they have been long established and have

developed rapidly, and also because the industry requires very large investments of fixed capital. Thus, if new firms were contemplated, the promoters would find considerable difficulty in securing the initial capital required, since the prospects of a profitable return would be doubtful.

Secondly, rails are usually manufactured according to order and strict specifications. In many cases mutual understandings exist between the leading firms and also between them and their customers. New firms could not easily secure a market standing even when they had surmounted the initial establishment difficulties.

It should also be noted that in order to buy off foreign competition in certain markets at various times by means of international agreement, the English firms have been forced to keep to their national agreements in order to present a united front. International agreement is a form of "collective bargaining," which necessitates that the firms in any one of the nations party to it should keep together in order better to negotiate with the combined firms of other nations.

There are two main classes of firms engaged in the manufacture of galvanized and corrugated sheeting, viz. (*a*) "mixed" firms—controlling their own supplies of raw materials and semi-finished products, and (*b*) "pure" firms—dependent upon boughten supplies of materials. The conditions of this branch of industry tend to make it more and more necessary that the firms should be large and "mixed," since they are much more effective for production and competition. Consequently, we find that the industry seems to be becoming more and more dominated by a few leading mixed firms, or firms possessing some degree of definite control over their materials. This circumstance also tends to prevent the establishment of new firms unless very large amounts of capital are forthcoming for initial investments in a fixed form. Altogether, the number of existing firms is really small as compared with the

large and increasing extent of the trade; this is also considerably concentrated as to allocation. These were some of the conditions assisting the development of local combinations which formed a basis for that effective temporary combination, The National Galvanized Sheet Association.

Another good illustration is available in the South Wales Siemens' Steel Bar Association, formed to control a branch of manufacture wherein the existing firms numbered about a dozen or so, concentrated in locality and producing uniform products for the same markets—tin-plate firms in particular. It is stated that there are not any imported bars of Siemens' steel equal to the home products, and that the tin-worker requires a different thickness of bar for the various specifications of tin-plate. Very often he will require small quantities of particular kinds, so that all the tin-plate works have to use a large proportion of home manufactured bars which are adapted to their requirements. It is said that some of them are unable to use foreign bars at all.[1] Hence there arises a differential or protective advantage which facilitated the development of the South Wales Siemens' Steel Bar Association. The advantages of the home firms as regards transport, and sometimes through the possession of a complete vertical organization of production, were also very valuable adjuncts.

As another instance, the manufacture of ship- and boiler-plates, angles, etc., might be taken. As has been seen, this industry is largely concentrated in certain localities, *e. g.* the Clyde districts, the North-East of England, South Wales, supplying consumers who are also somewhat concentrated as to location.

The firms within these groups possess a practical control of the trade arising within their respective localities or elsewhere. Their proximity to shipbuilding centres and transport advantages as regards other consumers protects them from the possibilities of competition coming from firms in other districts which

[1] *Tariff Commission Reports*, Vol. i, § 874.

might take up this branch of manufacture. The firmly established reputation of existing firms, their strength and the effectiveness of their plant, and their old-established trade connections, all tend to militate against the growth of new firms within these localities. In view of the position of this industry it seems that the existing firms are comparatively few, their products are fairly uniform, and they are all affected by much the same circumstances. Further, since about 1904 local associations of firms in certain districts, as the North of England and the Clyde district, have, at various times, been parties to terminable agreements to respect each other's territories. This, too, is a form of "collective bargaining" which tends to make the firms in one locality hold together in order to negotiate better with the combination of firms in another locality.

These instances may help to show that immunity from foreign competition to some degree, at any rate, is not the only condition which makes for effective combination in various branches of the iron and steel industries. They also seem to show that the various external conditions exercise in actual practice the influence tentatively indicated and ascribed to them earlier. It is possible that this may be further established by means of a good negative instance; that is, of an industry which has comparatively little occasion to fear potential competition from foreign firms, but which has so far proved quite unsuitable for industrial combination since various other circumstances of the industries constitute "external" conditions which are distinctly unfavourable; this is the South Wales Tin-plate Industry.

At first glance, the absence not merely of temporary combinations, but of monopolistic or highly effective temporary combinations in the tin-plate industry appears to be rather strange, because some important "external" conditions appear so favourable. The manufacture of tin-plates is chiefly concentrated in South Wales, within a fairly compact area, viz. West Mon-

mouth, South Glamorgan, and East Carmarthen.[1] Thus the enterprises producing tin-plates, black-plates, etc., are in the closest proximity for the most part, with very similar local interests. Further, these home firms, so highly localized, have a practical monopoly of the home market—foreign importation has never been seriously considered; also, in spite of foreign tariffs and foreign competitors, Welsh tin-plate practically dominates the world's markets where quality is required. Since the industry has recovered from the results of the McKinley tariff, felt at their worst in 1891, it has secured a firm footing in every part of the world. In addition to this, the enterprises engaged within the industry possess many "differential" or "protective" advantages which impede the establishment of new works outside South Wales; *e. g.* the successful manufacture of tin-plates depends almost entirely upon the skill of the artisan, largely inherited, in the opinion of one of the best known tin-plate makers in South Wales.[2] This supply of skilled labour, traditionally familiar with the processes of the industry, is most readily available in South Wales. Again, the proximity of the centres of production to the seaboard and excellent ports for importing raw materials and exporting finished products, to firms producing the semi-finished steel to be rolled into plates, and also to the adjacent supplies of coal, coke, and water, the old-established reputation of particular Welsh brands and marks, are all extremely important factors in helping Welsh firms to compete for trade successfully. Taken in conjunction with the fairly uniform character of the various classes of the tin-plate products, they constitute protective or differential conditions which would seem to favour the development not merely of strong price or output associations, but of combinations "appreciably monopolistic" in character.

[1] Cp. The Manufacture of Tinplate.—*Institute of Mechanical Engineers*, 1905, Tables.

[2] *Ibid.*, p. 503.

Yet, strangely enough, even temporary associations intended for the regulation of competition are lacking; an output association—the Manufacturing Board of 1895—proved a failure if regarded as a form of industrial combination. The industry has been termed "a disorganized trade, in which the competition of the South Wales firms is uneconomical if it is not ruinous." [1] It has also been considered that even informal temporary agreements, if they existed, could exercise comparatively little influence in affecting the operation of competition among the tin-plate manufacturers.[2]

Moreover, it is interesting to find that there has been great difficulty in combining the workmen in the tin-plate industry of South Wales into effective trade unions. Repeated attempts ended in failure, and only in recent years have organizers been able to establish permanent unions. It appears that even now these unions are sectional, some comprising tinmen, others millmen, etc. This is said to be partly due to the fact that some tin-plate firms are mixed, *i. e.* manufacture their own supply of semi-finished steel.[3]

This gives a clue to one circumstance which militates against the establishment of effective combinations of producing enterprises, viz. the fact that the firms vary in character; and, further, it may also be concluded that they vary in size. A visit to some of the tin-plate works illustrates and confirms these conclusions in a striking fashion. Some of the firms are large and well equipped, controlling their supplies of steel, coal, and coke; others are small and privately owned, dependent upon boughten supplies of raw materials. Some firms control only a small number of mills with small output, producing tin-plates, or black-plates, or both of these; other firms are newly established, possessing up-to-date plant with electric rolls and special processes; while a

[1] A Word to Tin-plate Manufacturers, *Iron and Coal Trades Review*, March 23, 1901.

[2] Cp. *The Western Mail*, February 26, 1913; *supra*, p. 208.

[3] *The Economic Journal*, June 1909, pp. 299–305.

number of firms use old machinery of a varied character. The existing enterprises vary in an infinite number of ways, and it would seem to be well-nigh impracticable to establish common agreements or bases for combination which would be satisfactory to all parties concerned.

It is also seen that the number of existing firms is very considerable as compared with the total volume of trade. Counting firms of good standing, with recognized brands, they are said to number well over seventy. However, it seems that the available statistics do not adequately show how numerous are the tin-plate enterprises in South Wales. They generally refer only to the regular, recognized makers producing well-established brands and controlling several modern mills. There are other tin-plate works, either with small outputs, producing varied brands, or producing irregularly. Above all, there are works which possess the requisite means for entering the field with any favourable turn in prices, while new tin-plate and galvanized sheet works are now being set up in many cases by firms which also control their supply of steel.

Comparing early and modern accounts of the tin-plate trade, it seems that this has always been one of its most striking features. The manufacture of tin-plates was introduced into England from Saxony, and first established at Pontypool, Monmouthshire, in 1670.[1] There were 4 firms in 1700, 9 in 1800, 16 in 1845, 34 in 1850, 40 in 1860, 67 in 1865, 59 in 1870, 75 in 1875. Coming to recent times, it appears that in 1891 there were 98 firms, which marked one of the most prosperous periods of the trade; in 1896 they numbered about 85, in 1905 83, and in 1910 there were over 70 firms making brands recognized all over the world.[2] It also seems quite evident that the industry has tended rapidly

[1] *History of the Trade in Tin* (P. W. Flower).
[2] *Manufacture of Tin-plates* (Beaumont Thomas); *Journal of the Institute of Mechanical Engineers.*

to become concentrated in South Wales; at present there are comparatively few firms which are engaged in manufacturing tin-plates in districts outside South Wales.

Reference has frequently been made to the multiplicity of the independent firms, and with the returning prosperity of the trade old works abandoned in 1891–5 were again brought into use, and new ones are also being established. Not only do the existing enterprises vary as to size, equipment, resources, and classes of plates, but in addition some works produce tin-plates and black-plates, and also galvanized sheets, iron, and steel goods. In the depression of 1891–5 some firms turned their energies towards making galvanized sheets, and have continued to produce them. Under modern conditions some produce their own supplies of semi-finished steel; others prefer to buy their steel bars elsewhere.[1] Thus some of the firms are "mixed" works, others are "pure," some are large and some small, while the entry of the self-contained steel makers into the trade has resulted in the introduction of another difficult factor.

The pure works have always constituted a characteristic feature of the industry, and circumstances favoured their persistence. The plant required for the manufacture of tin-plate is not very expensive; comparatively little change has taken place in the methods of manufacture. "The successful manufacture of tin-plates depends almost entirely upon the skill of the artisan, largely inherited." Labour is paid very high wages, fixed capital is considered of more secondary importance. There is a plentiful supply of labour in South Wales, and of semi-finished steel, coal, coke, and tin, and also ready markets for the Welsh tin-plates, so that the small firm can continue to flourish by the side of the large mixed works like Baldwins, Ltd., or R. Thomas & Co., though the latter naturally derive many advantages from their superior position as regards production.

But the essential point is that new works can also be

[1] *Iron and Coal Trades Review*: "Tin-plate Notes," August 1901.

more easily started for these very reasons; this is a source of potential competition which can easily become actual, should conditions offer an inducement to new firms. Apart from this, the existing conditions of the industry tend to prevent any effective combinations. The number of the existing enterprises is almost a sufficient hindrance of itself. "We can form no combination in the tin-plate industry, because it is divided up with so many small enterprises," was the opinion of one manufacturer. This difficulty is intensified by other unfavourable "external" conditions.[1]

The position of dealers and middlemen in the industry further tends to prevent the formation of any association of manufacturers to regulate prices. The tin-plate trade is considered rather peculiar, because from its financial conditions and the world-wide distribution of its products, the trade has got into the hands of merchants, who buy out and out the greater proportion of every firm's production. Therefore the merchants have a considerable hold on prices.[2] This has long been a feature of the trade, and one which indicates a condition hampering the development of any effective combinations of manufacturers. The dealers would have to be taken in, and this would swell the number of members beyond all reason; a combination of manufacturers alone would most probably be ineffective, if not impracticable, from the very outset.

It has been considered that the "conservative" and "individualistic" character of the tin-plate industry, the independence, individualism, and mutual rivalry of the tin-plate manufacturers, were sufficient to make any combination between them by any form of industrial combination impracticable in this industry.[3] The view expressed by one writer is very interesting in this

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[1] *Tariff Commission Reports*, Vol. i, § 874; *supra*, p. 208.
[2] *Ibid.*
[3] Many of the South Wales tin-plate firms are very old-established, and therefore proud of their independent position and anxious to maintain it.

connection. Thus it was considered that there are manifest reasons why the individual tin-plate manufacturer should oppose a proposal to buy him out, and especially why directors and managers should set their faces against it. In a large number of cases the individual proprietor has a certain amount of pride in the works which he has founded, inherited, or otherwise acquired. As owner of these works he is a person of some consideration in his own neighbourhood. Without such ownership he may become more independent and more secure; but he is still a less important individual. The directors and managers have a yet more direct interest. It has been said that it is perhaps owing to this self-protecting and conservative instinct that the British tin-plate industry is not already consolidated on American or kindred lines; with the result that the tin-plate industry of this country must suffer from the many discordant notes that may be struck by its members.[1] With regard to the attempts to form combinations, it has been said that "failure arose from disagreement as to the percentage proportions which should be allotted to individual firms. This, however, was clearly not an inevitable, although a very likely, source of disagreement. It only needs that tin-plate manufacturers should be reasonable enough to secure such an amount of agreement as would bring about the end in view." Unfortunately, the "only" indicates conditions that are not easily fulfilled. Even during the trying period of 1891–7, when the industry was in a very distressed condition, the tin-plate manufacturers could not easily pull together. The limitation of output by means of joint action was not altogether satisfactory as attempted by the Manufacturing Board of 1894–5. It is said that independent management, mutual rivalry, and individual action are features which have long been, and must continue to be, characteristic of the South Wales tin-plate industry, "whether in

[1] *Iron and Coal Trades Review*: "A Word with the British Tin-plate Makers," March 23, 1901.

regard to the competition of different works, or the jealousies of different kinds of workmen"; whereas "the ship is most likely to sail safely when it carries the flag of the union of patience, concession, and charity."[1]

The plea for united action was largely in vain, even in times of stress, but since 1894–5 the industry has recovered its position, and independent makers would probably be all the more loth to bind themselves by agreements on account of their mutual rivalries, even if the conditions of the industry favoured, or rather allowed it.

The essential basis of a temporary association for regulating outputs and prices is some form of mutual agreement as to standard prices, and allotted outputs. The number of the enterprises, their varying circumstances, products, and equipments, would make it extremely difficult for them to arrive at any agreement that would be mutually satisfactory. The fact that new enterprises can enter the trade without great difficulty, and particularly the extension of "mixed" works if market conditions are encouraging, are additional circumstances which would tend to make any effective regulation of prices impracticable. Of course, any permanent combination is all the more difficult to establish successfully owing to the difficulties of agreement and of valuation, the overcoming of individual prejudice and independence, and the absence of security against the arising of new firms.[2]

In studying the problem of industrial combination in England, nothing is more instructive and helpful than to extend the inquiry over national borders by means of comparisons. In the case of the tin-plate industry this is especially useful. For it is found that in Germany this branch of manufacture soon came to be controlled by a Kartell, while in the United States a "Tin-plate Trust" was formed in 1899, when the

[1] *Wales*, 1895, Vol. ii, pp. 9–13.
[2] Cp. *The Western Mail*, February 26, 1913; *supra*, pp. 217–18.

industry had only been established for a decade or so, and not for over two centuries, as in South Wales.[1]

In Germany, the tin-plate enterprises were comparatively few, and the "national" conditions already referred to would tend to facilitate the formation of a Kartell. In the United States artificial or "hothouse" influences were at work. "The excessive competition of the many tin-plate plants established under the hothouse influences of the tariff of 1890, in company with rising prices of raw materials, has brought about the formation of a combination known as the American Tin-plate Co."[2] The general conditions of the industry were favourable; the existing plants numbered about forty, about half of them being really "effective" or necessary; the dealers,—"the Big Four" of New York —and those controlling existing works favoured combination. Moreover, the existence of the tariff, the similar circumstances of the firms concerned, and also the necessity of the case tended to facilitate the formation of the combination.

However, it is very interesting to notice that even in the United States industrial combination in the tin-plate industry does not seem to have had a very prosperous career. Quite apart from any defects of organization and over-capitalization, which are serious enough, the industry has not proved a favourable sphere for trust development, largely on account of the ease and rapidity with which new tin-plate enterprises sprang up.

This fact seems to support a conclusion which is interesting in view of the case of South Wales. The British Iron Trade Commission reported that it seemed to be pretty certain, from the available records, that whatever virtual monopoly of the tin-plate trade the Steel Corporation may have possessed when it was founded, or whatever the amount of control exercised

[1] *Trusts, Pools, and Corporations* (Ripley), p. 301.
[2] *Ibid.*, p. 305.

over the tin-plate trade at an earlier date by the American Tin-plate Trust (1899), competitive concerns "increased largely and rapidly," subsequent to its formation (even in the short period 1899–1901), until the twenty-six tin-plate works under the control of the Steel Corporation became less than half of the whole number existing. Figures were given which showed that at the end of 1901 no fewer than seven new tin-plate works were in course of construction, as against one in April 1898, and four at the end of 1895.[1] Thus it has been considered that while the action of the above consolidation could not be regarded as uninfluential in the affairs of the tin-plate trade (the Steel Corporation subsequently included the American Tin-plate Co.), it was not likely to be all-important, as it would have been while independent concerns were less numerous.

In 1899, at the time of the formation of the American Tin-plate Trust, it is said that this consolidation comprised all the existing works except two. Yet the above quotation furnishes an interesting indication of how firms can "increase largely and rapidly" in the tin-plate trade, even when the powers of destructive competition possessed by a large amalgamation like the Steel Corporation, or the American Tin-plate Co., would be likely to deter new competitors from entering the field. This comparison reflects an interesting light upon the possibilities of potential competition in South Wales, where so many existing firms are small, and requisite labour, machinery, and raw materials are easily obtainable.

The tin-plate industry furnishes a good instance of how the various circumstances of an industry constitute the "external" conditions of combination, which operate so as to determine the possibilities of effective combination jointly, and not singly. Otherwise, as far as some conditions are concerned—*e. g.* the relation of the industry to foreign competition, the localization and

[1] *Report of the British Iron Trade Commission*, 1902, § xii, pp. 162–3.

proximity of the enterprises engaged in it to one another, their special advantages as regards the supply of raw materials,—effective if not "appreciably monopolistic" combination would appear to be practicable in the tin-plate industry.

Turning to another sphere of industry, the application of the "external conditions" tentatively indicated earlier seems to be excellently exemplified and tested in the coal industry—an industry of such vital importance to England. As far as foreign competition is concerned, industrial combination would seem to be quite feasible in the coal industry; importation is practically unknown, and the export trade is enormous. Moreover, the restriction of competition would seem for a variety of reasons to be particularly desirable and necessary for enterprises engaged in the coal industry. However, it is a striking fact that since the dissolution of the Vend of Newcastle in 1844, there have been only a few industrial combinations of any kind among coal producers so as to exercise any effective regulation of competition, that is apart from those of dealers engaged in distribution. This seems to be a fact of national importance. Evidence is available which seems to show that the prices and profits secured by colliery enterprises generally have not always been satisfactory.[1] It appears that the coal industry is liable to be affected by periods of depression from time to time which can be very serious in their effects. Moreover, the burdens placed upon the colliery enterprises by law, apart from those to which they are normally liable from the nature of the industry, are very considerable. The production of coal represents a branch of industry wherein England maintains its position relative to other nations, particularly as regards the amount of exportation.[2]

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[1] *Some Notes on the Coal Trade* (D. A. Thomas); *International Regulation of Competition* (Lewy); *Economic Journal*, June 1893, p. 644; *Labour Strife in the South Wales Coalfield* 1910–11, Chap. i, etc. Cp. *Miners and the Eight Hours Day* (C. M. Percy).

[2] *The Tariff Problem* (W. J. Ashley), pp. 100–5.

However, it is frequently stated that, despite the increasing output of coal, its commercial or market value does not increase proportionately, but rather tends to decrease in amount; also that, taking the coal industry and the enterprises engaged within it generally, complaints as to the risks and losses involved often rest upon serious grounds.

It has been rightly stated that the coal trade is the last to participate in a general revival of trade, and also the trade that suffers longest from any general depression. The coal trade is also considerably influenced by the fluctuations of particular industries and of trade generally. In the coal industry variations in supply and demand produce disproportionate effects on prices, which tend to fluctuate very widely. A small derangement in the production and consumption of coal influences its prices quite out of proportion; a comparatively small deficiency may produce a very large increase of prices. Similarly, a slight excess of production tends to reduce prices very greatly.[1] As has been shown, this is so because coal conforms to the law which influences the prices of articles of prime necessity. Thus, for example, in 1873 demand increased one-tenth as compared with 1871, and prices trebled. In 1901 demand fell off only by about 6,000,000 tons, and prices came tumbling down.[2] Not only do the prices of coal fluctuate widely, but they also vary rapidly and frequently. This again may be seen by reference to price statistics as indicated in various records. This strong tendency towards fluctuation is aggravated by several circumstances peculiar to the coal industry; and, curiously enough, these are some of the very conditions which militate against the development of any effective combinations to mitigate, if not to eliminate, the effects of the fluctuations of prices by restricting

[1] *Some Notes on the Coal Trade* (D. A. Thomas), pp. 9–10, 13.

[2] Cp. *The Journal of the Royal Statistical Society*, 1902, "Address on Coal Exports" (D. A. Thomas), pp. 35–46.

competition between the enterprises engaged in this industry.

The sudden increases in the prices of coal are not always to the advantage of the producers. Coal-owners are bound by long contracts taken maybe when prices were low, for every large colliery must contract for deliveries extending over six months or a year; and immediately prices go up the miners agitate for higher wages. Collieries cannot easily secure long contracts at these periods of high prices, for buyers do not lend themselves to this policy. The latter often adapt the times of purchase and terms of delivery according to the condition of the market so as to secure the benefit of any fall in prices in placing their contracts. Middlemen and big consumers often find various reasons for reductions in prices, and the colliery owners, who must keep the pits going at all costs, often make large concessions in order to secure contracts. The coal merchants and middlemen exercise an enormous influence on the coal trade, as was seen during the strike of 1912. They take the risks of freightage and delivery, which neither consumers nor producers could bear, and may sometimes "prejudice prices" and aggravate fluctuations to a considerable degree.[1] At all times there is naturally a very strong tendency towards over-production in the coal industry, since the only way of keeping down the costs of production is to increase output. Fixed charges are extremely heavy in this industry, through the vast outlays of fixed capital which must be undertaken, such as the costs of keeping workings open and in repair, of management, of ventilation, drainage, surface plant, royalties, wayleaves, etc.;[2] only by distributing them over a larger and larger output is profitable working possible. Thus colliery owners already working at a loss through low prices, which may be

[1] *Some Notes on the Coal Trade* (D. A. Thomas), p. 13.

[2] Cp. *Monopolistic Combinations in the German Coal Industry* (F. Walker), p. 41.

largely the result of over-supply, seek to increase the output upon which the loss is made, and this only tends to aggravate the depression. A great deal of evidence is available which shows how strong is the tendency towards over-production in the coal industry, and also how excessive and disastrous the competition of the various collieries may become to the owners, the workers, and the industry generally, and ultimately to the community as a whole.[1]

This may afford a general indication of the very serious effects of unrestricted competition in the coal industry, so that in this industry, above all others, combinations of colliery firms to restrict prices would seem highly necessary and desirable. It is also "a question of national importance," since it has been said that at times "we are exporting large quantities of coal at less than cost price, . . . giving away to the foreigner, with insane prodigality, our mineral wealth—wealth that is by no means inexhaustible, and that cannot be replaced."[2] Over-supply and the competition of home collieries are constantly cited as causes of depression and loss in the coal industry.

It is not surprising that ever since the close of the sixteenth century attempts have been made to restrict the operation of competition in the coal industry, by regulating output and prices by means of combinations of producers. The first systematic attempts of this character seem to have been made in the coal trade. Yet it is a striking fact that since the dissolution of the Vend, May 13, 1844, and the modern development of the industry, few combinations of coal-owners have been able to exercise any continuous control over competition in the production of coal in Great Britain generally. Even in the combinations which have been

[1] *Some Notes on the Coal Trade*, etc., pp. 1–14; *International Regulation of the Coal Trade* (Lewy); *The Regulation of Competition in Coal* (Defuisseaux); *Monopolistic Combinations in the German Coal Industry* (Walker), etc.

[2] *Some Notes on the Coal Trade* (D. A. Thomas), p. 7.

formed the "structure" and the "sphere of operation" have been mainly local in character.

No general or extensive regulation of competition in the coal industry of Great Britain has ever been established; even the local temporary combinations have not proved altogether satisfactory, and they are not viewed with much favour by those in the industry. After a discussion as to the operation of the Westphalian Syndicate at an International Conference of Miners, one conclusion was "that although there are enterprises of this character which, owing to a combination of favourable circumstances, can succeed in Germany, these conditions do not prevail everywhere; and that which has succeeded in Westphalia would fail disastrously in England. . . ."[1]

This position is all the more striking when one compares the position in England with that in the United States or in Germany respectively. In U.S.A. the coal industry has for a long time been controlled to a very considerable degree by monopolistic combinations, as in Germany by monopolistic Kartells.[2] The Rhenish-Westphalian Coal Syndicate has been considered the most effective and important combination in Germany, if not, indeed, in the whole world, approved by leading manufacturers and also by the Prussian Government as a valuable means of restricting competition, steadying prices and wages in the German coal industry.[3]

"Whether we consider its size, its industrial importance, or the ingenuity and perfection of its organization, there are few combinations in the world, and none in Europe, that equal or surpass the great coal cartell on

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[1] *The International Regulation of Competition in the Coal Trade* (Lewy), pp. 65–9.

[2] *The Economic Journal*, June 1899, pp. 161–5; *U.S. Industrial Commission Report*, Vol. xviii, pp. 145, 154–5; Appendix 1, *d*, p. 167–73; *Monopolies and the People* (Baker), Chap. iii; *The Anthracite Coal in U.S.A.* (Sheafer).

[3] *U.S. Industrial Commission Reports*, Vol. xviii, Part v.; *infra*, pp. 376–86, Appendix; also *Diplomatic and Consular Reports for Germany*, 1911; Cd. 5465–166.

the Rhine. . . ."[1] Yet foreign competition is an important factor in the German home markets, *e. g.* in Hamburg, the centre of the North Sea trade in coal, the English and Germans wage nearly equal war; while a similar rivalry exists in the Baltic between the English and Upper Silesian coal.[2] It seems clear that some of the "national" circumstances of the coal trade in England must be extremely unfavourable, operating as "external conditions" of combination. It was the emergence of these conditions which broke down the power of the Vend of Newcastle; it is the pressure of their full growth and mature operation that have tended to hamper, *pari passu*, the effective development even of temporary and local combinations in the coal industry of Great Britain right up to the present time. The period following the dissolution of the Vend was termed "the Coal War"; this term might sometimes apply to the trade in much more recent times, despite the repeated attempts at combination between colliery enterprises.

(1) Natural conditions seem to militate against the formation of effective combinations in the British coal industry on any extensive scale, since the coal measures are very widely distributed all over the country and very varied in character. Coal is found and worked in over forty different districts in the United Kingdom. Thus the existing collieries vary very widely in circumstances from district to district, and even from colliery to colliery within any one district conditions may be very different as regards production and distribution. Some districts have special advantages in the particular quality of their coal, the possession of special markets, transport facilities, and geological conditions; in some districts and collieries the seams are thick and even, in others they are thin and faulty. Some mines are dry, with good top and bottom, others are difficult to work through the presence of water, gas, and faults. With

[1] *Monopolistic Combination in the German Coal Industry*, pp. 2–3.
[2] *Ibid.*, pp. 14–23.

so many varying circumstances, it is quite out of the question to expect that any satisfactory basis for temporary agreements can be easily determined upon by a number of firms.[1] Above all, the competition of various districts, and even of various classes of coal with one another, tends to prevent the formation of associations which are local in their sphere of operation. Potential competition can easily become "actual." If prices should rise in one locality as the result of joint regulation of competition by a combination of producers, the existence of abundant transport facilities would soon bring in coal from other districts, and defeat the combination. Industrial combination in the coal industry on any extensive or "national" scale is naturally all the more difficult.

The importance of this "external condition" is seen the more clearly by means of a comparison with the case of Germany or with that of U.S.A. For example, the coal deposits of Germany lie chiefly in three districts, all of which are situated in Prussia, the largest in Westphalia and the Rhine province, mostly on the east bank of the Rhine.[2] Mainly for this reason the existing collieries may be divided into a few groups, according to their locality.

The anthracite coal supplies of U.S.A. early became controlled by a strongly monopolistic combination, the development of which was facilitated by the fact that the deposits of anthracite are highly concentrated in location. "The territory occupied by the anthracite coal-fields of Pennsylvania is but a diminutive spot as compared with the area of coal in Pennsylvania alone, to say nothing of its vast extent in other parts of the United States." The total area of the anthracite fields in U.S.A. is about 470 square miles—making but an insignificant showing. The position of the firms producing anthracite coal in this respect was only one of

[1] Cp. *Royal Commissions on Mines, Reports*, 1886, 1871, 1907. Cp. *The Coalfields of Great Britain* (Ed. Hull).

[2] *Monopolistic Combinations in the German Coal Industry* (F. Walker), p. 5; also *infra*, pp. 376–386.

the many circumstances which favoured the development of the Anthracite Trust.[1]

The importance of the influence of "potential" competition of other districts as a check to local combinations of colliery firms in England is also seen more clearly from a comparison with the case of the United States. In England, the abundant facilities for transport, and the short distances between various coalfields, tend to bring the collieries in different districts into competition with each other. Potential competition can the more easily become actual. The importance of this condition is seen more clearly by comparison with the position of firms in the United States in this respect. For in U.S.A. the bituminous coal deposits are worked in about twenty-seven States, so that it has never been possible to control all the production by a single authority or combination. Local combinations, however, controlling all the fields of one locality have long been an important feature of the trade, and are said to have been able to control prices effectively within their respective localities. "The fact that the principal item in the cost of coal is transport enables a combination covering all the production of a certain field to raise prices very considerably before competitors can afford to ship from other producing districts."[2] Moreover, in the United States the railway companies "have entered the coal trade directly or indirectly," so that the prices at which the independent traders can afford to sell are largely influenced by the railroad rates, which are very important in this land of great distances. This factor tends to neutralize the influence of the scattered location of the bituminous coal in the United States, whereas in England their full force may be exerted against even local combinations of coal producers. It is said that in America the freight costs have been manipulated in favour of the combinations of coal producers, whose

[1] Cp. *Anthracite Coal in U.S.A.* (Sheafer), pp. 9–12; also *Monopolies and the People* (Baker), pp. 26–37.

[2] *Monopolies and the People* (Baker), Chap. iii, p. 33.

interests may sometimes run transversely through a number of industries.[1]

(2) Secondly, in Britain the existing colleries are not only varied in circumstances, but also so numerous as to retard the development even of local combinations between them. The industry is not "*concentrated*" between a comparatively small number of firms, as was the case in U.S.A. and Germany. It has been seen that this is a condition which operates in favour of effective combination. In 1912 the number of collieries at work in the United Kingdom were estimated at a little over 3,600.[2] In the South Wales district alone there are over 200 colliery companies, operating 671 collieries of very varied sorts and sizes.[3] The returns for each of the eight "inspection districts" in the United Kingdom show that the collieries are not only very numerous, but exceedingly varied in circumstances, even within each district—a different position from that in U.S.A. or Germany.[4] In Germany, the number of colliery enterprises was given as about 300 as far back as 1901, and some of the largest of these were controlled by the State.[5] Further, various statistics show that a process of concentration had been at work very strongly tending to reduce the number of independent owners by means of consolidations, *e. g.* in the following districts—

Rhenish Westphalia.		Saarbrück, Baden	Other Rhenish Districts	Upper Silesia	Lower Silesia	Saxony
1881–90.	181 Collieries	34	16	99	43	48
1895.	165 ,,	31	12	53	19	34
1899.	162 ,,	28	13	53	20	33[6]

[1] *Monopolies and the People* (Baker), Chap. iii, pp. 37–39.
[2] *List of Mines in the United Kingdom for* 1912.
[3] *Ibid.*, and *The South Wales Coal Annual*, 1912.
[4] *List of Mines in The United Kingdom*, 1912. *Monopolistic Combination in the German Coal Industry* (F. Walker), pp. 30–37.
[5] *Monopolistic Combinations in the German Coal Industry*, Note 6.
[6] *Iron and Coal Trades Review*, March 1, 1901; Cp. also *Die Bergwerke, v. Salinen im niederrheinish-westfalischen Bergbaubezirk*, pp. 4–5; and *infra*, pp. 376–86 Appendix.

It has also been shown that the tendency towards concentration by absorption and amalgamation as between various enterprises had been strongly at work for some time, as a result of which the control of the production of coal had become "concentrated" to a very considerable degree, and the existing firms had been reduced to a comparatively small number of large mines or groups of mines. There existed associations of various kinds between coal and coke producing firms in different districts previous to the establishment of systematic and well-developed cartells; these considerations must have tended strongly to favour the development of effective combinations within the coal industry in Germany." [1]

Similarly in the United States, the control of the production of anthracite coal in Pennsylvania was "concentrated" to a very considerable degree. Seven large corporations, engaged in mining, selling, and transporting coal, controlled nearly two-thirds of the anthracite coal areas, and mined and marketed the greater part of the total production of anthracite coal. Thus individual operators could not hope to compete with them; for the latter were further handicapped by the fact that they were wholly dependent upon the railways for getting their coal to markets. The transverse interests of the large corporations through a number of connected industries represented another consideration which further facilitated effective combination for the production of anthracite coal in U.S.A.[2]

The foregoing contrasts reflect an interesting light upon the position with regard to the possibilities of combination between colliery firms in Great Britain.

(3) Some indication has been given already as to how the existing colliery enterprises in Great Britain vary

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[1] Cp. *Monopolistic Combination in the German Coal Industry*, passim; also *infra*, pp. 376–86 Appendix.

[2] Cp. *Anthracite Coal in the United States* (Sheafer); *Monopolies and the People* (Baker), p. 33, and *passim*, Chap. iii.

widely as to size and general circumstances even within the same district. Some of them are large, employing thousands of men and working their own seams; others are small, employing a few score of men, or even less, and working leased coal properties. In some cases colliery enterprises also produce clays, ironstone, as well as particular classes of coal. The conditions of production may vary enormously from colliery to colliery, largely on account of the inevitable variation in natural conditions—the particular quality of coal produced, whether for household, gas, steam, or manufacturing purposes respectively; or again, great differences may arise as to the particular methods of working adopted —whether by shaft, drifts, or levels, the natural difficulties encountered from faults, thin seams, and fiery gases. Even as regards the collieries in any particular district, however compact the coalfield may be, the great variation in the circumstances of the different collieries makes it a very difficult matter to arrive at any basis of agreement which would be permanently satisfactory to all the parties concerned.

In addition to the differences indicated above, others arise with regard to the circumstances of distribution as between collieries in different districts, and even between collieries in the same districts; and in many cases these are very considerable. It is also interesting to notice how rapidly new collieries are being opened up in certain districts, as South Wales, South-west Yorkshire, or West Monmouth.

(4) Again, almost every industry depends upon a cheap supply of coal for motive power. Any attempt to regulate the prices of coal or limit the output in favour of producers must encounter the strongest opposition from a great number of interests. Thus it has been stated that the very suggestion that a joint committee of coalowners should put up the price of coal and keep it up was "altogether fallacious." Coal is one of the chief raw materials for our various manufactures; if the industries producing the latter were a monopoly of

the United Kingdom we might regulate our coal prices. But other nations can and do produce these manufactures; half the coal consumed in the United Kingdom each year is thus said to be in that part dependent upon foreign trade.[1] Moreover, a large portion of our coal output is for export, and any stiffening of prices might endanger our position in neutral markets for coal where the competition of other countries happens to be keen.

(5) Middlemen also play a very important part in the coal trade at the present time. In most cases they conduct almost the whole of the export trade and a considerable portion of the total trade. Colliery proprietors have the less to do with the actual business of selling and arranging for freights, which is largely entrusted to sales agents at the various ports and central markets. These agents possess wide functions and exercise considerable influence upon prices.[2] As to the "middlemen," their position seems to present a very considerable obstacle to the restriction of competition; *e. g.*—English miners have always held that the owners should combine to keep up prices. This view was very strongly urged upon the owners at a conference following the lock-out of 1893. The owners replied that they had not attempted concerted action for keeping up prices hitherto, believing that such a combination was impossible, especially as the prices were not entirely under their control. . . . The English Press declares also that the pretensions of coal merchants and middlemen are very often unbounded. . . . The big consumers, and especially the middlemen, will always oppose any project which has for its object the restraint of the abuses they practise, and by which they profit. They will stick at nothing in effecting the miscarriage of any project whatever for the regulation of production.[3] The

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[1] *The Economic Journal*, Vol. iii, pp. 644–5.

[2] Cp. *Some Notes on the Coal Trade* (D. A. Thomas), p. 13; *South Wales Coal Annual*, pp. 169–84 (1910).

[3] *International Regulation of the Coal Trade* (E. Lewy), pp. 26–27; also pp. 19–26.

above reference seems to express the position very well, and throws an interesting light upon the present inquiry

(6) Moreover, the coalowners in this country would not readily agree to any voluntary regulation of output, since the easiest way of keeping down the costs of production is to increase output and distribute the heavy fixed charges and possible losses over the widest area. The opinion of a veteran miners' leader is typical testimony in this connection: He stated that, as regards the possibility of agreements of masters to regulate competition, a large number of employers would have usually no greater desire than to outwit each other; and that in any case it is probable that the majority would always be seeking and finding a means to evade any such undertaking being entered into.[1] A colliery owner commented on this view in the following manner:—

Mr. —— is certainly not mistaken. We all know it; . . . when owners have met to fix selling prices, etc. . . . they seem to have no difficulty in arriving at an understanding. But what do they do when they get home? Great care is taken not to invoice below the prices agreed upon, . . . but secret discounts are made in an underhand way. Personal commissions are not unknown, overweight is given, or a better quality of coal supplied than that which the customer ostensibly buys. There are other methods, still more effective, of evading the agreement, but I prefer not to divulge all the mysteries of carrying it on. . . .[2] The various leaders of the English miners unanimously concluded, at an International Conference of Miners, that the regulation of the competition of colliery firms generally by industrial combination was impracticable in Britain. One of the conclusions drawn from the discussion of a scheme of regulation was that "the owners are unable to establish among themselves an agreement to that effect. . . . The simple reason for such an agreement

[1] *International Regulation of the Coal Trade* (E. Lewy), p. 35.
[2] *Ibid.*, p. 28.

being impossible among the owners is that their interests are so diverse;" *e. g.* some of them have large interests in iron and steel manufacture, others are directors of Railway Companies, or Gas Companies (they are also subject to the pressure of big consumers and middlemen). Moreover, it was pointed out that a great many mines may be in a privileged position as to other mines, as regards productive capacity, and markets. "Now it is obvious that the owners of these privileged mines will never sacrifice their advantages for the benefit of the community. . . . If the agreement between the owners is difficult in one district, it is more so between the owners of different districts. . . ."[1] "Where agreements exist they are more apparent than real, mere shams in fact. . . ."[2] Or again, it has been said that in England, especially, cheap coal is an article of faith; it is always the same story. Coal must be cheap, so that the coal-consuming industries may prosper. . . . Miners cannot secure adequate wages, or capital adequate profit, because there is a lack of balance between the production and consumption of coal, because the owners are suffering from the baneful influence of middlemen, or pressure of big consumers, and thus go on with a reckless, cut-throat competition. . . .[3] Yet the authors of these complaints decided that the enterprises for regulating competition in production and prices which have succeeded in the coal industry in Germany and elsewhere "would fail disastrously in England";[4] and although they aver that "there is no necessity to bow with absolute humility before the apostles of economic science or to swallow wholesale their oracular deliverances," even the supporters of a proposal to regulate production in the coal industry also admitted that there are doubtless economic principles unfavourable to such schemes which must not be disregarded.[5]

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[1] *The International Regulation of the Coal Industry* (Lewy), p. 107.
[2] *Ibid.*, p. 30.
[3] Cp. *Ibid.*, p. 102.
[4] *Ibid.*, p. 68.
[5] *Ibid.*, pp. 18, 19.

The above section indicates some of the many conditions which tend to militate against any effective regulation of competition in our coal industry. The very circumstances which aggravate the evil effects of competition—the necessity for middlemen or sales' agents, long contracts, the wide and rapid fluctuations of coal prices, the inevitable tendency towards oversupply, the number and variety of the colliery enterprises, etc.—only add still more to the difficulty of forming any effective combinations. When, in addition, the inherent defects of temporary combination—lack of central control, of effective guarantees for good faith, or "sanctions" for agreements—are considered, the absence of effective combinations in the coal industry, even temporary in nature, and local in structure and sphere of influence, is not so strange as might appear at first sight. The actual circumstances of the industry seem to furnish a good illustration of the actual application of the "external" conditions of combination.

Only where these are specially favourable is it found that temporary combinations arise successfully and operate effectively, *e. g.* in Fifeshire. Here one large company—the Fife Coal Co.—controlled about 50 per cent. of the total output; the other companies were comparatively few in number and much alike in circumstances, since the coalfield is small and fairly uniform throughout. They also have certain markets in which they are protected by freight advantages from the competition of other districts.

If industrial combinations were practicable anywhere, one would imagine that it would be between the firms engaged in producing steam coal and anthracite coal in South Wales. These are two branches of the coal industry of Great Britain which really possess what approximates to a practical monopoly. South Wales steam coal is indispensable and unrivalled for marine purposes and for steam-raising generally. Various authorities support the opinion that "Welsh coal has a practical monopoly in the markets to which the bulk

of it is shipped."[1] The only possible rival—North of England steam coal—is handicapped by inferior steaming qualities, freight charges, and by Rhenish-Westphalian competitors. Similarly, owing to its chemical composition, South Wales anthracite coal has a monopolistic advantage as regards its suitability for certain purposes, *e. g.* distilling, brewing, and for export for special purposes, particularly to the Continent. About 90 per cent. of the output of anthracite in the United Kingdom is produced in South Wales.[2] Although both these branches of coal production are largely concentrated in location, and the existing firms are in close proximity, enjoying various local advantages of a "differential" or "protective" character, yet combinations for restricting competition, temporary and permanent alike, have not been adopted as practicable. Various "external" conditions of combination appear to be too unfavourable. The fact that the South Wales and Monmouthshire Coalowners' Association has been in active operation ever since 1864, yet has never attempted to include among its functions the regulation of competition between its members, who control about 80 per cent. (over 40,000,000 tons) of the output of coal in South Wales and Monmouthshire, seems to be very significant in this connection.

Of course, some colliery owners in South Wales have made attempts to establish combinations for the restriction of competition by regulating output and prices. As recently as March 25, 1911, a meeting of anthracite coal owners was held "with the object of concerted action in controlling the production of anthracite coal. . . ." Yet it was announced early in April that the proposal had been considered impracticable and had fallen through, like earlier proposals of a similar character. The number of existing collieries was too great (over fifty independent firms), their size and circumstances were too varied, and the owners too individual-

[1] *Some Notes on the Coal Trade* (D. A. Thomas), pp. 15–18.
[2] *South Wales Coal Annual*, pp. 302–8 (1910).

istic to allow any satisfactory basis of agreement to be determined upon, quite apart from the question of middlemen, and other conditions.[1]

Similarly, one finds that various proposals and attempts have been made to form temporary combinations for regulating the output and prices of steam coal. In 1883 such a proposal was advocated, but it was not even taken up. Mr. John Nixon—Pioneer of the South Wales Steam Coal Trade—made several attempts to establish associations for this purpose, yet all in vain. Such schemes were not accepted, inasmuch as they "run counter to certain well-known laws of the trade."[2] Mr. Nixon sought to remedy the disastrous effects of competition by means of an output association. "He and other colliery proprietors fought, and fought hard, to establish a control of output," but the only result was that "such dissension was created among the colliery owners that the scheme was abandoned, and each allowed 'to gang his own gait,' and sell his coal as best he might."[3] Another attempt at a price association for the periodical fixing of minimum prices experienced a similar fate. Its career was short and inglorious: "the mean men broke away, made their own bargain, and left their colleagues out in the cold." "Long experience taught Mr. Nixon, almost worthy to be called the father of the export trade, the chimerical nature of schemes of this kind (*i. e.* temporary combinations). . . . His experience . . . reveals what can be done and what cannot be done."[4] Each scheme was considered to have "had a superficial fascination, but depended on several fallacies which must have caused it to break down in the end . . . also upon a disregard of human instincts which did break it down in the beginning."[5] Other proposals have been made

[1] Cp. *South Wales Coal Annual*, pp. 125–30; 302–327 (1910); Hints to Coal Buyers (Evans), Anthracite.

[2] *John Nixon, Pioneer of the Trade in South Wales Steam Coal* (Vincent), p. 230.

[3] *Ibid.*, p. 233. [4] *Ibid.*, p 235. [5] *Ibid.*, pp. 234, 236.

to restrict competition by means of temporary combinations of South Wales colliery owners, as a united body and also in several sections. Yet all these schemes have proved unpopular. Thus it has been concluded that the question then arises as to whether it is possible to devise a practicable scheme of temporary combination that will remove the evils of competition. There is said to be so much mutual rivalry between colliery enterprises that the thing cannot be done, however desirable it may be; and in support of this it is pointed out that so far every attempt at combination has egregiously failed. Many proposals have been made from time to time, but nothing has come of them; "and those that have got so far as a trial have speedily and ignominiously broken down. . . ." Attempts even at local combinations, of a temporary character, have proved unsatisfactory and impracticable; the proposals made in 1896 for a scheme of temporary combination to secure the restriction of competition in the South Wales steam coal trade had no result, although many "external conditions" are favourable in the South Wales coalfield, particularly within the steam coal area.[1]

Throughout the United Kingdom generally it has been found that temporary combinations are unsatisfactory as a means of regulating output, prices, and the various conditions of trading in the coal industry. The many Coalowners' Associations which have been in active operation for a long time in the various coalfields appear to have no intentions or functions as regards the regulation of competition in their industry by means of joint action.[2] They seem to be becoming more and more a means of organizing concerted action for every purpose except this, which seems to be carefully excluded from the functions of the joint committees; these comprise negotiations with the national "Federation of Miners," schemes of mutual insurance against explo-

[1] *Infra*, pp. 288–89.
[2] Cp. *Coal and Iron Diary* (Epstein).

sions, accidents, sectional strikes, resistance to the aggressions attempted by various interests and legislators. The coal industry certainly seems to exemplify the application and operation of the "external" conditions of combination already indicated, which are so unfavourable within it as to make both temporary and permanent combinations between colliery firms impracticable unless special circumstances are present, as happens in a few cases.

Another good illustration is afforded by the position of the firms engaged in the coarse spinning and weaving branches of the cotton industry. On some occasions masters and operators in these trades have agreed jointly to run short time to work off a temporary glut of production or to avoid a temporary scarcity of raw cotton, whether it may arise from natural or artificial causes. But systematic combination between the enterprises engaged in coarse spinning and weaving, for the purpose of regulating the operation of competition in their trade, appears to be impracticable. For it has been said that such combination as between the medium and coarse spinners would not have been possible, because if it had been done, within twelve months there would have been three or four million fresh spindles put down.[1] The rapidity with which new enterprises can be established for coarse and medium spinning, and also for weaving, has come to be regarded as a notorious feature of the cotton trade. The initial capital required is comparatively small, and speculative persons have exploited any revival of trade in order to float new companies by taking advantage of the limited liability system.[2]

Some interesting statistics are available which show how rapidly establishments can multiply for coarse and medium spinning and weaving. They also show that the spindles for spinning finer counts do not increase like

[1] Cp. *Tariff Commission Reports*, Cotton Industry, § 340.
[2] Cp. *Ibid.*, § 90, 217–8, 335, 451—Introductory Tables.

those for coarser and medium counts. Thence arises one condition which has favoured the permanent combination formed between fine cotton spinning and doubling enterprises. Moreover, there is a tendency for the number of spindles and looms to increase more rapidly than the consumption of raw cotton.[1]

Apart from this there always tends to be a surplus of productive capacity—a form of potential competition which may easily become actual on the shortest notice.

It has been said that there are more spindles in proportion to the consumption of raw cotton in Lancashire than in the United States.[2] In addition, the existing enterprises in these branches are not only very numerous, but very varied in size and circumstances: some are large, others are small, hiring buildings, machinery, or power. The extreme "specialization" —a distinctive feature of the cotton and woollen industries generally—which has been operative within the spinning and weaving branches of the cotton industry tends still further to make effective combination impracticable.[3] There is a lack of uniformity in the conditions of production and distribution in these branches of industry as compared with others.

It is only necessary to examine the conditions governing the enterprises engaged in coarser cotton spinning and weaving in order to realize how unfavourable are the conditions of these branches of industry for any schemes of industrial combination. They also afford a valuable illustration of the manner in which the application of the "external" conditions of combination is found to exist in actual practice. One manufacturer has summed up the situation thus:—I have been trying for ten years without success to get an association to maintain one price in our own trade. However, apart from the unfavourable conditions of

[1] Cp. *The Trust Movement in British Industry* (H. W. Macrosty), pp. 117–23.
[2] *Cotton Land!*—Too Many Mills (Pearkes Withers), *passim*.
[3] Cp. *The Lancashire Cotton Industry* (S. J. Chapman), pp. 148–154.

the trade, combination is impossible because our manufacturers are too jealous.[1] The number of the enterprises engaged in these branches and the variety of their circumstances are decidedly unfavourable for combination projects.

The spinning and weaving branches of the woollen industry also afford further confirmation as to the correctness of the conclusions indicated earlier. One prominent firm considered that any attempts at industrial combination in order effectively to regulate trading conditions in these branches of industry would be a hopeless failure in every case. Apart from the tendency towards "differentiation" or "specialization," the number of enterprises are too numerous, and far too varied in size and character. Some are large factory establishments; others are small enterprises carried on by individuals who hire tenements, machines, and various requisites, often with borrowed capital, and take work on commission. "New enterprises can spring up like mushrooms should trade conditions give any encouragement." These circumstances, together with the specialization of production and distribution, and the individualistic organization of the whole industry, render effective combination out of the question in these primary branches, although foreign competition is almost a negligible factor. As will be seen later, the contrast with the position of some of the "secondary" branches is very striking.[2]

But it must not be assumed that the effectiveness of temporary combinations is determined solely by the degree to which the "external" conditions are favourable or unfavourable. The very nature of such combinations exercises a very important influence, more particularly as regards the efficiency of their internal organizations. Those connected with important combination schemes in England have explained the position

[1] *Tariff Commission Reports*, Vol. ii, Part i, p. 199.
[2] Cp. *infra*, pp. 300–4, 309–15.

as follows: Temporary combinations have no standing in the Law Courts, and therefore there is no certain guarantee that the agreements will be kept by the combining members. No matter how favourable the technical or internal conditions of the industry may be, they do not of themselves increase the chances of, or security for, the faithful observance of agreements; when trade conditions make it appear a profitable or necessary course to any member, agreements go by the board. The only certain guarantee for loyal adherence on the part of members of temporary associations, and therefore for their all-round effectiveness, is the strong sense of honour like that which is found in trades where the heads of firms are men of high standard and training. . . . Apart from this, the intensity of the organization of a temporary combination must tend largely to determine its effectiveness. Unless there is some central organization with a considerable degree of permanency constantly in touch with the various member-firms so as to check their actions, even those temporary combinations which appear strongest are in constant danger of disruption.

The correctness of such a view is apparent when compared with actual instances. Thus the Scotch Steelmakers' Association, and other strong temporary combinations of enterprises in the iron and steel industries, as well as temporary combinations in other industries, afford typical examples. As has been seen, many conditions have favoured the effective operation of such "associations," and for considerable periods their price policy has really been very effective in character. But internal differences have led to their dissolution, *e. g.* the temporary disbanding even of the Scotch Steelmakers' Association on several occasions, and in May 1910 internal differences almost wrecked the association altogether. In a recent trade article in *The Times* the whole position was indicated. It was considered that the collapse of the Steelmakers' Association was seriously

threatened by the resignation of two firms, the largest and most influential in the combination, who were at last pacified by special arrangements in order to save the association.[1] Other members were complaining of the agreements, and the position of the ship and boiler-plate associations became involved; but eventually an arrangement was "patched up" between them, and open dissension was smothered. So also the National Galvanized Sheet Makers' Association, which has been so effective for long periods together, came to grief in July 1910.[2]

The ultimate collapse of such organizations, which are essentially temporary combinations in character, is not uncommon, for there are certain root causes of failure common to every form of temporary combination on account of their very nature. The above are only typical cases, but they exemplify a conclusion that seems indisputable after a review of the development of temporary combinations in England; viz. that temporary combinations do not represent a satisfactory means of restricting competition, by regulating output, prices, and trading conditions generally, if only on account of their weaknesses as a form of business organization. In particular industries wherein special conditions are favourable they may exercise extensive powers for considerable periods together; but their control is essentially temporary and periodic. Even in such cases the combination may be wrecked at any time by the secession of a few of the strong members; its existence is constantly imperilled by the inability of the members to secure mutual guarantees for the constant and faithful observance of agreements. In many cases purely temporary combinations in England are something more than patched-up coalitions, which seem to exist only on sufferance, and are liable to disruption at

[1] *The Times*, May 13, 1910.

[2] Cp. "Some Aspects of Industrial Combine," *Economic Journal*, Vol. 1909, p. 597.

any time through dissensions, doubtful adherence, and finally defection. As a form of business and industrial organization they fail to ensure that complete unity of aim and purpose and continuity of action, which are essential for the success of combined action in any sphere of industrial activity. Where the conditions of an industry are unfavourable, the situation is greatly aggravated and largely hopeless; where they are favourable for industrial combination, temporary combinations cannot utilize them to the fullest degree. Their control over production and distribution is incomplete, and their inherent economic defects are only aggravated by their legal position, which offers no external means of remedying the fragility and instability of their organization.

As regards the particular "form of organization" adopted and its influence upon the effectiveness of an industrial combination, it seems certain that the permanent combination or amalgamation alone can provide a satisfactory method of substituting common control in the place of individual action, of harmonizing conflicting interests for the common good, effectively and continuously, provided the conditions of an industry are favourable. Apart from the advantages arising out of the complete degree of control exercised by the common organization over the members, its permanency and also the fact that it is legally recognized increase its stability and its efficiency. For it seems probable that some of the most characteristic defects of temporary combinations in England arise mainly from the fact that their articles of agreement are not legally recognized or enforceable; for, as was indicated earlier, the fundamental basis of temporary association rests upon these agreements. Thus, apart from the conditions of the industry, which constitute the "external conditions of combination," the temporary combination is seriously imperilled by inherent defects right from its inception.

A significant indication of the influence of the form

of organization adopted by a combination of enterprises, and the strength of the amalgamation in this respect, has been afforded by the fact that a far greater number of enterprises can be united into an effective organization by means of permanent combination than is practicable in the case of temporary combination. It is almost essential for the success of a temporary association that the enterprises shall be comparatively few in number. Yet it has been seen that thirty or forty enterprises, or even more, may be combined into a most effective amalgamation. Once the amalgamation is formed, the independence and identity of the combining firms, like their mutual rivalries, are finally submerged from the very nature of its organization.

But permanent combination is not always desirable or practicable on the part of the combining firms, for the form of organization ultimately adopted is not the only condition determining the effectiveness of the resultant combination. Old or well-established firms heartily dislike the loss of identity that is involved in permanent combination, and only make the sacrifice as a last resort, or when conditions offer sufficiently attractive prospects of compensation. Even small firms, which must be included if the fusion is to be fully effective, may demand unreasonable purchase prices. The interests at stake are so considerable that the prospects of success must be proportionately assuring in order to bring about the amalgamation. The heads of firms which are strong enough to continue the competitive struggle for some time, even at a loss, hesitate finally to throw in their lot with weaker firms. There is no doubt but that the individualistic traditions of English industry have tended to make the sacrifice of identity undesirable.[1]

On the other hand, it is found that temporary combination is avowedly recognized as an unsatisfactory method of checking competition or regulating industry

[1] Cp. *infra*, 264–6.

by means of combined action. It is considered to be a temporary expedient rather than a settled form of business and industrial organization; there must be some permanent element in the common organization which is designed to eliminate and restrict competition effectively and continuously.

Just here the development of the "hybrid" associations seems to arise, partly as the result of compromise, as an intermediate or "hybrid" development largely influenced or "determined" by the special conditions of English industry. For as the U.S. Industrial Commission concluded, the form which combinations take in a particular country seems to be partly a result of the business habits of the country, partly a result of legislation or lack of legislation within it.[1] Thus the position of this intermediate development seems to turn largely upon the attitude of English law towards temporary combination, and that of English business leaders towards amalgamation. Temporary combination proved to be unsatisfactory, since its weaknesses and the negative attitude of the law only aggravated its inherent defects. Amalgamation was undesirable or impracticable in many cases, since it involved the suppression of identity and the loss of individual enterprise and originality in production and distribution. In addition, conditions and facilities may not be sufficiently favourable to make the formation of an amalgamation practicable.

Further, it seems probable that this hybrid development has been considerably influenced by the Kartell organizations of Germany, especially as regards the more recent forms of organization exhibited within it, which have assimilated many of the functions of the German "Kartelle."[2] Speaking broadly, the above view may serve to indicate one general origin of this subsidiary development of horizontal combination in so far as it

[1] *U.S. Industrial Commission Reports*, Vol. xviii, Introductory, p. 8.
[2] Cp. *Tariff Commission Reports*, Vol. i, §§ 61, 132–152.

exhibits distinctive characteristics. These can only be fully estimated by reference to typical instances, which may be taken so as to indicate and illustrate the nature, extent, and determinant conditions of the movement towards the development of the "hybrid" associations or combinations.

PART II.—THE DEVELOPMENT OF THE "HYBRID" ASSOCIATIONS AS A FORM OF HORIZONTAL COMBINATION

It is necessary to understand as clearly as possible exactly what is comprised within this development quite apart from the general indications of its possible origin given already. For it seems probable that the highest form of organization falling within this development is that of the German Kartell, which has a most complex and intricate organization as a form of horizontal combination. The combining firms unite upon the basis of an agreement or written contract which is legally binding and enforceable. Thus the combination possesses a definite legal and corporate existence. Moreover, this element of strength is reinforced by other circumstances. Any possibility of members being tempted to break agreements—for example, by secretly underselling or exceeding their allotted quotas of output or "participation"—is removed by the establishment of a central "sales bureau," which wholly takes over the distributive functions of the members. The latter retain only the control of the technical management of their respective establishments. The joint management determines the total output, allots this between the individual members, conducts sales, determines prices, facilitates exportation, arranges all contracts, divides profits, levies fines, allots market areas,

admits new members, and undertakes distributive functions generally on behalf of the combined firms.[1]

The German faculty for organization, increased by military and technical training, the favourable attitude of German law, and the existence of protective tariffs, permit and assist the development of such elaborate organizations. They have extended over the whole range of industry in Germany, and attained very great effectiveness as a method of regulating competition. Yet it is seen that the Kartell is in a large measure a temporary form of combination, and not always a satisfactory or stable form of organization.[2] There is no complete merging of individual identity and individuality on the part of the combining firms, particularly as regards the work of production. The combining firms surrender their independence only for certain purposes and for a certain period. Yet it involves a permanent element, in that there is a permanent central organization which possesses both a legal and a corporate existence, and also because there is a "complete merging" of certain functions, particularly as regards distribution.

This seems to afford one of the best standards by which to estimate the development of the "hybrid" combinations within English industry. Moreover, it seems all the more practicable since some of the more recent and more systematic forms of organization, exhibited within the general tendency towards industrial combination in England, afford some indications of an attempt to copy German practice.

However, it must be noted that these "approximations" to the Kartell in England cannot realize the full perfection of the German Kartell, since the "national" conditions are different in the two countries respectively. The important point is that the "hybrid" associations

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[1] *Über Kartelle* (Grunzel); *Die Unternehmerverbände* (Liefmann); *Tariff Commission Reports*, Vol. i, § 132–152.

[2] Cp. *Ibid*, and *Consular Reports*, Germany, 1911.

seem to meet the necessity or desire for an intermediate organization, which has a legal and corporate existence, and therefore avoids the weaknesses of temporary associations in this respect; and which, at the same time, obviates the distasteful sacrifice of identity and individuality on the part of the combining firms.

The development of horizontal combination within the English salt industry seems to illustrate the position. By 1888 the disastrous effects of internecine competition had made the position of the various salt-producing firms almost untenable. Temporary combination had been resorted to as a means of restricting this competition, but "the principle of association had been violated again and again."[1] Thus, in October 1888, the Salt Union—a permanent combination—was established with a view to regulating competition among salt producers. For a few years it was fairly successful, but by 1896 the growth of new firms had made its financial position very precarious. Various attempts to negotiate with "outsiders" were unsuccessful, until at last in 1906 the leading salt firms in England, union and outsiders, united to form the North-Western Salt Co., Ltd., which really represented a joint sales agency. For several years the operation of this "hybrid association" proved satisfactory as a means of checking the tendency towards internecine competition between the various salt producers. It should be noted, however, that the North-Western Salt Co. was dissolved twelve months ago; yet it appears that while it was in operation its efficiency as a form of industrial combination depended to a considerable extent upon the form of organization which it represented. For it maintained a large degree of effectiveness in an industry where permanent combination had not proved satisfactory, and also where the principle of temporary combination "had been violated again and again." It cannot be considered a permanent

[1] *Annual Salt Circular*, 1888–9.

combination, because the combining firms did not give up their individuality; neither did it represent merely a form of temporary combination, for the combined firms were registered as a joint stock company with a nominal capital, which possessed corporate and legal standing. In short, it represented a fairly close approximation to the German Kartells, on which doubtless it may have been largely modelled. For it appears that the relations between English salt-producing firms and the Continental producers generally have been of considerable importance. During its existence the North-Western Salt Co. acted as a sales department for the combined firms represented by it. It is said that its functions included the joint regulation of the industry, particularly as regards distribution, both in the home and foreign markets. The extensive control of the central organization tended to prevent bad faith on the part of the member-firms, while the fact that it was not an amalgamation made it impossible for newly established firms or "outsiders" again to force the position in order to sell out on favourable terms. Its dissolution in 1912, however, tends to show what will become clearer later on—that even the "hybrid" combinations represent an unsatisfactory form of industrial combination under certain circumstances.

Another good instance is the Industrial Spirit Supply Co., registered with a nominal capital subscribed by the combining firms. This "hybrid combination" is said to control the distribution of the bulk of the alcohol spirit produced in England. Since it acts as the medium between producers and consumers, it is the more possible for it to maintain intact the agreements between the various producers. This association is one of the nearest approximations to the German Kartells which is to be found in England. It is possible that its development has been somewhat influenced by the Kartell organization; for some of the keenest competitors of the English firms hail from Germany, and German methods

of production and organization in this branch of industry are particularly up-to-date and efficient. The fact that the English firms producing alcohol spirit are comparatively few and well established would make amalgamation and loss of identity undesirable.

A further instance is the Cablemakers' Association, completed about 1906. There is every reason to believe that this "hybrid" combination was established to act as a "sales agency" for the English firms producing cables, so that reckless competition was checked between the associated firms, and the general conditions of business made the subject of joint negotiation and action through the central agency. The Central Thread Agency is another good instance, for it represents a combination of firms producing sewing cottons and thread which approximates very closely to the German Kartell organization. It is said that this agency conducts the sale and distribution of the greater part of the threads and sewing cottons produced in England, and is the medium between customers and the producers represented by the agency; also that it supplies an effective method of industrial combination for restricting the internecine operation of competition, particularly as regards distribution, between firms to whom the idea of amalgamation, with the consequent loss of identity and individuality, might prove distasteful.

It has been seen that these joint "sales agencies" have reached full development only in comparatively recent years. Yet they must not be considered the only expression of the motives underlying this particular tendency. For they seem to constitute only one feature of the general movement which arises from the broad operation of the motives indicated earlier. Instances are available which show that there is a general endeavour to remedy or neutralize defects of temporary combination by some device or other, in cases where permanent combination either was not desirable or not practicable for various reasons. Such attempts seem akin to

the "sales agency" in general motives and nature, though differing in degree and particular features.

Take, for example, the British Rail Manufacturers' Association, which was said to be a branch of an international rail syndicate. It appears that a purely temporary form of combination proved unable to restrict competition between English rail-making firms, and that a form of joint sales agency was adopted to undertake and organize combined action with regard to the distribution of this class of products. It has been frequently stated that the regulation of the production of steel rails in England has been very effective indeed, involving in some cases an international sphere of operation. Amalgamation of the English enterprises producing steel rails would appear to be quite out of the question, and temporary combination was recognized as an unsatisfactory expedient. The temporary combinations for regulating the production of ship-plates and boiler-plates might also be considered in some ways a rough approximation to the Kartell organization. There is reason to believe that there has been at work a definite tendency towards the development of a form of horizontal combination, which does not involve the sacrifice of identity that amalgamation implies, but nevertheless provides a joint organization with greater stability, unity of aim and action, than is possible in combinations that are purely temporary in character. It is interesting to notice that this general desire to mitigate or neutralize the defects of temporary combination without resort to amalgamation has exhibited itself under some peculiar forms. For example, in the New Trades Combinations "invented" by Mr. E. J. Smith, a manufacturer of Birmingham, as a method of checking "the insane competition" which prevailed about 1890 within the small trades centred around Birmingham. This was really a form of temporary combination in which a novel means was adopted to secure the observance and enforcement of agreements—the central problem in temporary com-

bination. The sanction of the agreements was secured by an alliance with the trade unions, the combining masters agreeing to employ only trade unionists, and the latter agreeing to work only for masters who observed the price lists of the employers' combination. A staff of detectives was employed to detect breaches of the agreements, and various other devices were put into operation, but all in vain. After a few years of comparative success in the small trades of the Birmingham district, and of partial application in the cloth-dyeing industry of the Bradford district, the organization of the "Alliances," which lacked corporate existence and legal standing, went the way of most of the temporary combinations.

So also in the shipping industry, a device termed the "rebate system" has been adopted in order better to ensure the observance and enforcement of the agreements upon which the temporary combinations or "Conferences" of rival shipping firms are based. The various companies plying on a certain route agree to charge specified rates for freight, etc., and in order to guarantee the observance of these agreements and prevent any outsiders undercutting, pressure was brought to bear on the shippers; these were allowed a rebate of 10 per cent. or so if they had not shipped any goods by lines outside the Conference. This rebate was always kept three to six months in arrear, at the end of which period the difference was refunded, provided shippers had not patronized "outsiders." All the books and accounts of the Conference firms were open to be scrutinized by a joint board, and this placed a check upon any secret underselling. Thus the firms which are members of the "Conferences" have to remain loyal, and isolated firms outside at its inception are largely compelled to come in and to remain in. This system has been so effective that a Royal Commission was appointed recently to inquire whether the Conference system was not a form of monopolistic combination

injurious to British industry and commerce; still, its conclusions seem to be generally in favour of the Conferences.[1] It is interesting to note that the Conference organizations, while mainly terminable combinations in character, involve a permanent element in that a joint organ is the official representative and agency of the combined firms for carrying out the decisions and business procedure of the "Conferences."

However, this development of "hybrid" combinations must not be considered in any isolated manner. The effectiveness of the hybrid combinations is by no means due to the efficiency of their form of organization alone. It is no mere coincidence that the most successful are found in just those industries in which the "external" conditions of combination are most favourable. On the contrary, it is a matter of cause and effect; the form of organization is doubtless of great importance, but here, as in most spheres of Economics, the resultant phenomenon is not the result of one cause alone. The various "external" conditions of combination apply to the "hybrid" combinations just as much as to any other form of horizontal combination. Thus the firms engaged in the salt industry in England possess various advantages with regard to foreign competition in the home market on account of natural conditions, while their export trade gives rise to considerable influence in foreign markets. A considerable proportion of the industry is concentrated in Cheshire and adjacent districts, so that a large number of firms are in close proximity and much alike in general interests. Similarly as regards the enterprises in other districts; while the total number of firms was comparatively small, particularly in view of the volume of the trade, since the formation of the Salt Union largely prepared the way towards the "concentration of enterprise" by amalgamating over sixty firms as early as

[1] *Lloyd's Shipping Gazette*, May 11–14, 1910.

1888. With the increasing use of scientific processes, mechanical inventions, and the taking up of salt deposits, it is not so easy for new firms to arise as perhaps was formerly the case. The relations between the various enterprises, particularly after the formation of the Salt Union, must have facilitated the formation of a combination like the North-Western Salt Co., Ltd.

Similarly, it is found that the firms manufacturing alcohol spirit are comparatively few in number, while their size, efficiency, and control of trade connections make it difficult for new firms to arise. It is said that the production of alcohol spirit can be carried on successfully only where firms are also in touch with distilling enterprises. The existence of a large amalgamation of distilling firms increases the initial difficulties of would-be competitors of the latter and of the firms producing alcohol spirit. Moreover, the position of the home firms as regards foreign competition is favourable, while the demand for alcohol spirit is rapidly increasing.

As regards the sewing cottons and threads the home firms practically dominated the home market, and were strongly established throughout the world, largely on account of old-established reputation for excellence. The firms which constituted the amalgamation of Messrs. J. & P. Coats were all large, old established, and much alike in circumstances, and, above all, already in touch with each other through the Central Thread Agency dealing with the distribution of their products.

Again, the fact that the manufacture of cables has been largely in the hands of a comparatively small number of enterprises with well-established reputations and trade connections assisted the development of the Cablemakers' Association. Moreover, it is said that the modern cable firm is most efficient when it is self-contained for the provision of a considerable proportion of its materials. Thus the capital required by new enterprises is considerable if they are to have a fair chance of success. Apart from this, it is doubtful

whether new firms could command the technical skill, experience, and ability required. It is also said that foreign competition is not felt by the English firms so directly and keenly as might be expected.

Germany is our chief rival, but German firms are said to start out to make cables with a different aim from that of the English firms. The former seek to produce cables able to stand extremely high voltage, but not necessarily very durable. The English firms produce cables able to stand any reasonable voltage which may be required, but above all able to weather well and last out wear and tear. Of late years English authorities and engineers have become more inclined to stipulate for English cables, and our position for all the better classes of cable is maintained in England, and in the colonies in particular. The English cable firms are of a very high standard, and they have often been brought together through the existence of common interests, created sometimes by the joint undertaking of municipal work. Investigation reveals the favourable character of the "external" conditions in these branches of industry referred to above, and also their important influence in facilitating the development of the "hybrid" associations within them.

It appears that the same conclusions can be illustrated in a "negative" manner. Thus, apart from the character of their organization, the Birmingham Alliances failed largely because the conditions of the industries in which they were set up were very unfavourable indeed. In these trades—*e.g.* those making bedsteads, fenders, mattresses, etc., the existing enterprises are very numerous and usually very small, operating in small workshops or hired tenements, and often taking their work on commission. Comparatively little capital is required, and potential competition can the more easily become actual. The whole organization of these trades seems essentially individualistic and unfavourable to industrial combination. They are also vulnerable to foreign

competition, which is keenly felt at most times, and most certainly should home prices become inviting.

Yet it is some testimony to the value of the "Alliance" devices and the influence of the "form of organization" as regards effective combination, that the movement was attended with success for a considerable period.

The above may serve to illustrate the position of this intermediate development of "hybrid" combination which has been fully exhibited only of recent years, comparatively. Moreover, as will be seen later, there are indications that the "hybrid" combinations are likely to become an important feature in the general combination movement as time goes on; for the development of the large horizontal amalgamations seems to have spent much of its original force. It is true that the formation of the vertical amalgamations in the iron and steel industries seems likely to continue with considerable vigour, since it is intimately bound up with the conditions governing the working and development of these industries. It does not seem probable, however, that we shall again witness so pronounced a tendency towards the formation of horizontal amalgamations as was the case, for example, in the textile industries from about 1896–1900.[1] On the other hand, it seems quite clear that combinations which are purely temporary in character have small repute among business men as presenting a satisfactory means of restricting competition with the requisite degree of certainty and continuity. Their defects as a form of industrial and business organization, their inherent economic weaknesses, and their inability to take the fullest advantage of favourable conditions in an industry or of contemporary trade conditions, so as to organize the production and distribution of the combined firms on the most efficient and profitable lines, are disadvantages which weigh very heavily against them. It has been said that

[1] Cp. pp. 321–322, *infra*.

only a permanent combination can prevent private greed from bringing about disruption.[1] Still it seems clear that amalgamation is not always practicable or desirable from the point of view of the enterprises which contemplate combining with another. The development of the "hybrid" combination, as a form of organization which in some ways solves the above difficulty, seems to meet a real need and also to offer considerable prospects for further development in the future. For the permanent element included within it tends to minimize the defects of temporary combination as a form of organization; while, on the other hand, it enables the combined enterprises to realize some of the advantages of permanent combination, particularly as far as distribution is concerned, without the frequently distasteful sacrifice of independence and identity. However, the fact that the exact relations of the firms included within the "Sales Associations" are very difficult to determine, and also the variety which can be exhibited in their constitution and functions, make it very hard precisely to estimate and indicate their development. It seems quite clear, however, that permanent combination alone can offer a form of organization which is likely to be fully effective and satisfactory, whatever the conditions of trade or the relations of the firms combined, provided the circumstances of the industry concerned constitute favourable "external conditions of combination."

Purely temporary combinations not only represent an unsatisfactory form of industrial combination, but also a form of industrial or business organization which is defective as regards the control exercised over production and distribution. For whatever their particular features may be, the success of every form of industrial combination depends as much upon its efficiency as a form of business or industrial organization as does the success of any independent or individual enterprises. The mere fact that the rivalries of independent enterprises

[1] *Encyclopædia of Social Reform:* "Trusts" (H. W. Macrosty).

are eliminated in favour of combined action does not, of itself, guarantee the success of the resultant combination. Efficiency in the control of production and distribution is essential for any form of business and industrial organization. And from many points of view, industrial combination simply represents a method of organizing industry, commerce, and business generally, which has been evolved in order that enterprises may be more able to meet the requirements of modern conditions.

Chapter VI

THE DEVELOPMENT OF HORIZONTAL COMBINATION TOWARDS THE FORMATION OF PERMANENT COMBINATIONS

One of the main drawbacks of the "hybrid" combination is that it only enables the combining firms to realize the advantages of centralized distribution; those of centralized production are obviously not available in the "hybrid" combination. For administration cannot be centralized, production cannot be specialized, expert ability, machinery, labour, and all the various resources of the combining firms, cannot be utilized to the fullest degree, as is possible in the amalgamations. On the other hand, it is only fair to note that the originality and initiative of independent firms is retained so far as productive processes are concerned.

Again, it is clear that the "hybrid" combinations, like purely temporary combinations, can only be fully effective where the firms are comparatively few in number. They would probably be impracticable in industries where effective amalgamations have been developed between a comparatively large number of firms. This gives an indication of one of the differences in the conditions which influence the development of permanent combination. The other special conditions which have been tentatively indicated already will become more evident by application in actual practice.

Two classes of permanent combination have been broadly indicated, viz. (*a*) mere combinations of interests or amalgamations of capitals to develop an industry,

and (*b*) consolidations of enterprises or capitals which are intended and able to exercise "a dominance approaching monopoly over their branch of industry." The development of the former class depends mainly upon the willingness of the rival parties to combine, and the degree to which they realize the necessity of union and appreciate the economies which may be derived from such a course. The formation of such combinations is frequently a question of necessity, expediency, mutual compromise and arrangement. Their subsequent development is largely determined like that of any independent firm—*e.g.* by the efficiency of their management and of the organization of production and distribution, by general trade conditions, the strength of competitors, financial position and resources.

But it must be admitted that the second class of amalgamation is generally expected to provide a means of dominating the market and of regulating output, prices, and trading conditions to an appreciable degree in the particular industry concerned. Thus its development (*i. e.* both formation and subsequent development) will be influenced by the circumstances which determine the possibility of regulating competition effectively, as well as by those which influence the development of the former class of amalgamations. It should be noted that the first set of circumstances are in a large measure similar to those which have been seen to determine the possibility of regulating output, prices, and general trading conditions in an industry by means of purely temporary combinations or the "hybrid associations." Moreover, when the circumstances of an industry are favourable, even temporary combinations have been able to exercise powers "appreciably monopolistic" in character during limited periods and under certain trade conditions. However, it is found that where certain special conditions are present within an industry, an amalgamation can exercise a control that is "appreciably monopolistic"—continuously, and largely independent

of trade conditions in virtue of its superiority as a form of industrial and business organization.

Along such lines the practical application of these conditions may be considered in their relation to the development of the "trust" amalgamation, in accordance with the stricter interpretation of the terms taken earlier. As has been indicated, the development of the "trust" amalgamation is comparatively recent in England. It has been stated that until about 1895–6 the main direction taken by the tendency towards industrial combination has been towards the formation of temporary combinations rather than towards that of "trusts" or "single large corporations"; also that only from that date has there arisen a marked tendency towards the formation of these large "consolidations."[1] With the possible exception of the Salt Union (1888) and the United Alkali Co. (1890), the development of the "trust" amalgamations cannot well be placed much beyond 1896–7. As the available evidence shows, their subsequent development has been very considerable even in England, the classic home of the competitive system.

In order to facilitate inquiry, the operation and application of these determinant conditions may be roughly divided into three sections so as to bring out their influence upon (1) the *progress*, or "rate of progress," of the "trust" development; (2) upon its *sphere of operation;* and (3) upon the *structure* or form of organization usually adopted in England. Obviously, such demarcation cannot be rigid by any means, since the interweaving which occurs in actual practice must be reflected even in the present theoretical inquiry; moreover, by means of comparisons with U.S.A. or Germany, in these respects, the "national" aspects of the problem in England will become more evident.

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[1] *U.S. Industrial Commission Reports*, Vol. xviii, pp. 14, 15.

I.—*The progress of the movement towards the formation of "trust" amalgamations in relation to the operation and application of the "internal" and "external" conditions of combination.*

It has been stated that one of the chief reasons for the more tardy and less extensive development of the "trust" amalgamations, or, in fact, of any form of industrial combination in England, as also for the continuance of severe competition in various branches of industry, is to be found in the fact that the principles of extreme individualism have maintained a much firmer hold upon industry and commerce in England than is the case in other countries—*e. g.* Germany and U.S.A.[1] Moreover, the U.S. Industrial Commission has endorsed this view in that "this appears, on the whole, to be the right conception."[2]

For the tardy development of the trust in England may be partly ascribed to the "conservatism" and adherence to the principles of "individualism," which have constituted such marked features of English business men and business methods generally. The contrast between England and the United States in this respect can be well understood by reference to the various descriptions of "the American spirit," and the "economic atmosphere" of U.S.A. The temperament of Americans is peculiarly important in business spheres in that they are consciously daring and ever ready to invent or adopt new methods, and to discard old methods of organizing industry and commerce where there are prospects of monetary gain. The position of contrast with England in these respects has been brought out frequently.[3]

[1] Cp. *Jahrbücher für Nationalökonomie und Statistik*, October 1900, p. 434.

[2] *Industrial Commission Reports*, Vol. xviii, Part i, pp. 7–8, Introductory.

[3] *Economic Surveys* (Ashley), pp. 405–422; *British Iron Trade Commission Reports*, 1902; *The American Commonwealth* (Bryce); *Some Aspects of Competition* (Marshall).

The average American is said to possess an innate sense of capacity, boundless energy, and self-reliance, which are specially evident in business spheres and in the organization of industry and commerce generally. In the United States the public services and professional pursuits are considered to be less desirable than in England, for various reasons, some political and social. Ambitious men seek to realize their ambitions in the industrial field; therefore this sphere of activity has secured for its development the energies of the most ambitious and enterprising of Americans. Money seems to open the main avenues to prominence; the criterion of business success is essentially the amassing of millions. Thus industrial leaders are only too ready to devise and adopt speculative, risky, or aggressive methods of organization which promise to pay well. "The American business leader of to-day largely reproduces the economic man of our text books." [1] In England the conservative methods of industry, the lack of freedom in the effective organization of business, as in social and political matters, the influence of tradition, which often holds back the leaders of industry from availing themselves of new methods of business organization . . . have all tended to retard the development of the 'trust' amalgamation, in particular, as a form of industrial combination. Thus it has been said that English 'captains of industry' appeared to lack a proper appreciation of the 'trust organization,' and were held in check by the force of traditional business methods; whereas in U.S.A. the trust represented one of the most effective methods of 'organizing business for economizing all productive and distributive forces.' [2]

As has been shown, the dominant force in English industry is the average opinion of business men, and

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[1] Cp. *British Iron Trade Commission*, p. 10; *Tariff Commission Reports*, Vol. i, § xii, *b*, § 124.

[2] *Tariff Commission Reports*, Vol. i, § 124.

the dominant form of organization is the independent Joint Stock Company. In the United States the dominant force lies rather in the restless energy and versatile experience of a comparatively small number of very rich and able men, who dislike stereotyped joint stock methods, and welcome the more aggressive organization of the "trust."[1] But although the influence of "national temperament" in England has tended to retard the development of the trust, as compared, say, with the case of the United States, its operation as a temporarily isolated factor must not be over-estimated. It is clear that its influence is largely modified by, and dependent upon, that of other national conditions and activities which determine the range of its possibilities and the extent of its influence. Thus in U.S.A. the distribution of wealth gives more power to the individual than is the case in England, where the middle class predominate among investors. The "bulk" or "lot" form of stock-holding, the presence of vast mineral resources, wide markets, and the traverse interweavings between various industries, all tend to favour the aggressive and ambitious aspirations of American business leaders. Such conditions are lacking in England, where, in addition, business men are held in check by tradition, custom, stricter business and political morality, pride in family enterprises, rigid political, social, and business institutions.[2]

Thus the contrast in national temperament is by no means sufficient, of itself, to account for the comparatively tardy "progress" toward the formation of the "trust" amalgamations in England.

The conditions which occasion and "determine" the tendency towards industrial combination generally in England have been found to operate throughout jointly and mutually, not singly or serially. Contrary to what might be expected, the force of public opinion does not seem to have exercised a very considerable influence as

[1] *Some Aspects of Competition*, pp. 13, 14; and *passim*. [2] *Ibid.*

regards the progress of the trust development. "Not until the last two or three years (*i. e.* 1898–1901) has there seemed to be any sentiment hostile to these large combinations of capital," or "against the organization of combinations among different corporations; . . . the tendency towards combinations does not seem, however, to have been made to any noteworthy extent a political issue in any case; and the strong feeling on the subject which has been manifested for some years in the United States seems to have found only a very faint echo in England." [1] Only in isolated cases does public opinion seem to have influenced or checked the development, partly from the general feeling against corporations that threaten consumers—*e. g.* the "Soap Trust." In this case the newspapers were not favourable, and intensified the feeling against combination.

The motives underlying schemes of amalgamation or industrial combination generally must have been long at work beneath the surface in England before they assumed concrete form. Thus, although the "internal" conditions of combination might be strongly operative, and English manufacturers realized the disadvantages of internecine competition, the feasibility, and therefore the "progress," of the movement towards the formation of the "trust," or any other form of industrial combination, must have been largely influenced by the character of the "external" conditions of combination. Thus it appears that some fostering or hastening conditions must have been operative in Germany, and the United States in particular, which are lacking in England. For, as has been pointed out, the movement towards the formation of large amalgamations intended to secure a degree of monopolistic control in an industry is of comparatively recent origin in England.[2] In some cases the favourable "external" conditions have been of an artificial character. Thus

[1] *Industrial Commission Reports*, Vol. xviii, Chap. ii, pp. 15–32.
[2] *Ibid.*, Vol. xviii, Part i, pp. 14–19.

the comparatively tardy development of the "trust" amalgamations in England may doubtless be partly attributed to the absence of protective tariffs. It was seen that tariffs may operate both as an "internal" and also as an "external" condition of combination. Where the home industry is protected by a tariff it is unduly fostered, a large number of firms are set up, and competition between them tends to become intensified and its effects more disastrous. Combination is thus likely to be the more desirable. Moreover, protective tariffs serve as artificial barriers which hold in check the potential competition of foreign firms, and thus assist the development or operation of a combination of home firms. Conversely, the absence of tariffs in England has deprived the combination movement in England of a fostering condition of very considerable importance.[1]

Again, the history of several American trusts shows that much of their successful development has been due to the advantages secured over rival firms, by means of the unfair discriminations in freight rates made in their favour by railroad companies. It has even been stated that the history of the Standard Oil Co. points to the conclusion that, had there been an independent and impartial administration of the Pennsylvania and Ohio Railway, no oil monopoly could have been developed.[2] Such a fostering influence has been lacking in England owing to the impartial administration of the railways. The great importance of the railways as economic factors in the United States, on account of the vast distances to be traversed, enormously increases the advantage which a group of firms can secure through the unfair discrimination of rates in their favour.

Somewhat similar to these illegal favours in operation are the special privileges secured from State Legislatures

[1] Cp. *Trusts and the Tariff* (Bolen), and *supra*, pp. 173–4.

[2] *Monopolies, Trusts, and Kartells* (F. W. Hirst), p. 131, *passim*; *Les Industries monopolisées aux Etats-Unis* (P. de Roussiers); *History of the Standard Oil Company* (Tarbell).

by firms in U.S.A. The existence of separate State Legislatures is said to make bidding for favours possible. In England the entanglement of political and industrial interests has been kept under check on account of the stricter political morality. Moreover, adequate facilities for promotion have been lacking in England until the chartered accountants undertook the work of negotiating the amalgamations of enterprises. On the other hand, abundant facilities were available in the United States right from the beginning of the movement. This condition has been seen to be connected with the attitude of legislation towards the various forms of industrial combination. An amalgamation was the only form of combination legally satisfactory in U.S.A.; hence arose a strong impulse towards their development. Legislation has mainly adopted a negative attitude towards temporary combinations in England, and thus allowed their development without sanctioning their agreements. Its strict requirements have tended to check the development of amalgamations which are in any way speculative.[1]

Comparison with Germany bears out the general conclusions with regard to the influence of the tariff, and stringent company legislation, as the U.S. Industrial Commission pointed out. The requirements as to publicity, taxation, etc., has placed a serious check upon the development of the trust amalgamations in Germany. One peculiar feature of contrast is exhibited. It is said that on the Continent, especially in Germany, the system of company financing has been in some ways different from the English practice. In Germany a large number of firms have obtained the bulk of their capital from the Banks. This is especially the case in certain branches of industry, *e.g.* Electrical Engineering. English firms work more with private resources. In Germany, when a period of depression occurs and the

[1] Cp. *U.S. Industrial Commission Reports*, Vol. xviii, "Legislation," *passim*.

banks see their money in various competing concerns in jeopardy, they exercise their influence and control over industrial enterprises in order to relieve the situation by facilitating the formation of combinations between rival firms.[1]

II.—*The "sphere" or "extent" of the development of the "trust" amalgamations.*

It may be fairly concluded that the development of "trusts" in England has been less widespread as to extent or sphere of operation, as well as more tardy in progress, than has been the case in U.S.A. In a broad estimate of the position, the U.S. Industrial Commission concluded that the sphere of operation or extent of the trust development in England is relatively small as compared with the position in U.S.A., or with the monopolistic "Kartelle" of Germany.[2]

Moreover, it is seen that the "sphere" of the "trusts" varies within these countries, from the point of view of the industries influenced by the development of industrial combination generally. Thus some of the earliest and most monopolistic trusts of U.S.A. were formed in extractive industries, *e.g.* The Standard Oil Co., The Pennsylvania Coal Trust, The Copper Trust, etc. Similarly, as regards some of the most effective Kartells of Germany—*e.g.* those between firms engaged in the production of coal, potash, iron-ore, and salt. On the other hand, it has been seen that temporary combinations, much less "trust" amalgamations, are conspicuously lacking or unsatisfactory in our chief extractive industry, coal-mining. The manufacturing industries have proved the most extensive and favourable sphere for "trust" development in England. Yet even within this sphere a considerable contrast is discernible as com-

[1] Cp. *Tariff Commission Reports*, Vol. 4, § 434.
[2] *U.S. Industrial Commission Reports*, Vol. xviii, Introduction and Summary.

pared with U.S.A.: *e.g.* in the latter country the various branches of the iron and steel industries were early brought under the control of trust organizations; whereas even temporary combinations are lacking in many of the corresponding branches in England—tin-plates, wire, hoops, etc. Strangely enough, the various branches of the textile industries have proved one of the most favourable spheres for trust development in England, whereas in the United States these industries have been comparatively less affected, until more recent years at any rate. Thus it was stated in 1899 that within the whole group of textiles in the United States there appeared little tendency towards combination, on the surface, at any rate. Of course, horizontal combinations appeared later in certain directions within these branches.[1] Moreover, the "trusts" have developed in the United States in many branches of industry which have not been appreciably affected by the combination movement in England; *e.g.* the manufacture of leather, sugar, general foodstuffs, pottery, glass, silk, and a very large number of the "minor industries." Thus, it has been said that almost every branch of industry in the United States was influenced by the "trust movement," particularly during the period of its boom or "mania."[2]

It seems that the "limited" and "sectional" development of the "trusts" in England, as regards their "sphere of operation," can only be satisfactorily estimated by considering the application of the "external" conditions of combination in conjunction with the actual circumstances of production and distribution in some typical branches of industry. Every "trust," since it is an amalgamation of capitals, occupies a privileged position as compared with individual firms on account of the advantages it is thereby able to secure in production and distribution. Large resources are available,

[1] Cp. *The Economic Journal*, June 1899, p. 166.
[2] *Trusts* (Von Halle), *passim*.

production and distribution can be concentrated and specialized, and the various economies of combination can be secured. Provided the amalgamation is capitalized on sound lines, as is usually the case in England, these circumstances are likely to place the amalgamation in a "differential" position as compared with other independent firms, both as regards productive efficiency and also competing strength in distribution. However, impartial and accurate investigation has shown that no definite instances can be found in which an amalgamation derives any monopolistic power, solely or mainly, from the advantages of concentrated and consolidated capital. Similarly, the "economies of amalgamation" tend to be over-estimated, and cannot, of themselves, provide any sure or satisfactory source from which a trust derives its monopolistic powers.[1]

A survey of the actual development and "structures" of successful trusts in England and the United States shows that *the advantages of combined and concentrated capital must be supported by some more tangible and more definite "bases of monopoly."*

"The testimony of substantially all the combination men is to the same effect—that unless a combination has either some natural monopoly of the raw material, or is protected by a patent, or possibly has succeeded in developing some very popular style or trade-mark or brand, any attempt to put prices above competitive rates will result eventually in failure, although it may be temporarily successful."[2]

It has been stated that in Lancashire the combinations have been in specialities only, *e. g.* where there are water rights, as in the 'Printers' Combine' and the 'Bleachers' Combine,' where there is special spinning and a limited supply of cotton, as in the Fine Cotton Spinners. The textile trusts, in particular, seem to have

[1] Cp. *Trusts, Pools, and Corporations* (Ripley), Chap. xviii (C. J. Bullock); The Evolution of Modern Capitalism (Hobson), pp. 192–3.

[2] *Tariff Commission Reports*, Vol. 1, § 128.

derived their powers from some special circumstances or "differential" conditions which constitute a "basis of monopoly." Judging from the typical instances which may be taken from various industries, these "bases of monopoly" which enable an amalgamation to exercise the powers of a "trust" in England appear to arise out of some of the following circumstances—

I. Differential advantages as regards the supply of raw materials.

II. Differential advantages in production or distribution through the control of patents, trademarks, old-established connections, special processes, highly developed organization, and economizing of forces.

III. Differential advantages in distribution from the control of special facilities for cheap or easy transport on the most economical systems.

IV. Differential advantages in production or distribution due to the possession of a privileged supply of capital, of organizing ability, of labour, or of special legal rights.

These circumstances jointly contribute towards the development of a "trust" as distinct from a mere aggregation of capitals or interests, *ceteris paribus*. This qualification is of vital importance; it must refer to the "external conditions" which go to determine the effectiveness of any development of industrial combination.

Of course, the amalgamation of the enterprises in an industry must be practicable, first of all; the possibilities of monopolistic control of prices will then depend upon—

(*a*) The degree to which "external conditions" are favourable or unfavourable within the industry concerned.

(*b*) The degree to which the "differential advantages" are operative.

The groups of conditions in an industry termed "external conditions" and "differential advantages" must overlap at some points, since, for example, the latter are in many cases protective advantages which can check potential competition from becoming actual; that is, create a very favourable "external" condition of combination. However, temporary isolation, if arbitrary, is valuable for the purposes of investigation.

There exists the closest connection between the three directions of the horizontal development of industrial combination in their relation to the "determinant conditions" of combination. Where effective "temporary" or "hybrid" combinations are impracticable, the "trust" will be even more impracticable. Of course, the trust amalgamations will not necessarily be practicable where the other forms are practicable; yet it is clear that in either direction of development the degree of effective control possessed by a combination mainly depends upon the degree to which the special conditions or differential advantages are operative, in either a favourable or unfavourable manner. Moreover, a survey of the development of the Kartells in Germany goes to show that the degree of effectiveness or monopolistic control possessed by them depends upon circumstances similar to those indicated above; of course, this allows for the differences which arise from the operation of peculiar "national" conditions. With regard to the various branches of industry in Great Britain wherein effective combinations have been developed, particularly "trust" amalgamations, these above conditions are clearly operative.

A good instance seems to be available from the British shipbuilding industry; although it has been suggested that the shipbuilding and marine engineering firms in certain districts should combine together, "there has not been much done in the way of amalgamations in this country in the shipbuilding trade.

There are so many shipbuilders here that amalgamation would be impossible. Amalgamation is not practicable except in cases where there is plenty of work to go round without severe competition, but where there is a very large number of manufacturers and competition is keen an amalgamation is practically impossible."[1] This is said to be the case in the shipbuilding industry of the United Kingdom, with the exception of the branch engaged in the construction of war vessels, and armament. The circumstances of this branch are favourable; those which are operative as regards the other general sections of the industry constitute "external" conditions which tend to make it very difficult to establish effective combinations of firms, whether permanent, hybrid, or temporary, even though their relations with regard to foreign competition are highly favourable, particularly at the present time. While the firms engaged in shipbuilding and marine engineering generally are numerous and varied in circumstances, those which undertake the construction of warships, ordnance, heavy marine castings are very few in number, much alike in size, interests, and their markets. The "differential advantages" held by all these firms in common are also very considerable.[2]

Generally speaking, few of the English "trusts" derive any considerable power from differential advantages as regards the control of raw materials in the form of minerals. Herein lies one feature of contrast with the "trusts" of the United States and some of the monopolistic cartells of Germany. There are really only a few clear cases where amalgamations possess "trust" powers on this account in any appreciable degree, *e. g.* the Bath Stone Firms, Ltd., and the Associated Portland Cement Manufacturers, Ltd. Even the former case is in many ways only a local

[1] *Tariff Commission Reports*, Vol. 4, § 505.
[2] *Sheffield Daily Telegraph*, Supplement, January 28, 1911, pp. 17–19; also *supra*, pp. 81–4.

monopoly of a certain class of stone, with a limited "structure" and sphere of influence.

As to the latter trust, it seems that the conclusions of the U.S. Industrial Commission in 1901 still hold good. This amalgamation is said to exercise a real and considerable control over about the greater part of the home and export trade of the United Kingdom in Portland Cement, supplying the bulk of the vast demand of London, and a large proportion of the contracts at home and abroad where best quality is specified.[1] During recent years its position has been strengthened as a result of the reorganization of its management, and partly owing to the increasing demand for cement and its market position generally.

As regards the formation of this amalgamation, it has been said that "the cement industry, being based on the possession of a local monopoly of raw materials, seemed well fitted for consolidation."[2] With the exception of three, all the works included (viz. twenty-seven) were situated on the Thames and Medway, and possessed "such advantages in the quantity and quality of raw material" that "upwards of 80 per cent. of the entire output of the Portland cement is produced on the Thames and Medway, where the supplies of chalk and clay are of the finest quality for the manufacture."[3]

Clearly this constituted a "differential advantage" as to the control of raw materials, and furnished a favourable "basis of monopoly" which helped to make it possible for "trust" powers or control to be exercised by an amalgamation of the existing producers. But other circumstances of this industry constituted favourable "external" conditions of combination, *e.g.* the industry is very localized so that the firms engaged within it are in close proximity, much alike in general

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[1] *U.S. Industrial Commission Reports*, Vol. xviii, p. 34.
[2] *The Trust Movement in British Industry* (H. W. Macrosty), p. 109.
[3] Cp. *Prospectus of the Assoc. Portland Cement Manufacturers (Ltd.)*, and the *U.S. Industrial Commission Reports*, Vol. xviii, p. 34.

circumstances and in interests; so also the existing firms were comparatively few in proportion to the volume of trade, which was "concentrated" to a very considerable degree under the control of the existing firms situated in the Thames and Medway districts. The best quarrying districts for raw materials with good sites for works had also been taken up by firms existing at the inception of the amalgamation. The above circumstances and the strength of the amalgamated firms naturally tended to check the growth of new firms. Potential competition from foreign firms cannot easily become actual, since it is said that their competition is not felt directly; for the excellent reputation of the various "brands" produced by the associated English makers gives them control of most of the valuable orders for the best grades of cement both at home and abroad, the cheaper qualities being supplied by foreign firms. This instance shows how both "differential advantages" and "external conditions" have contributed jointly in determining the development of an amalgamation that may be fairly termed a "trust" in the stricter sense of the term.

It is said that the position of the Associated Portland Cement Manufacturers' Association has recently been somewhat affected by the competitive devices of firms which are outside the association, and also from those of Belgian and German firms. Still, the general indications given above hold good in their application, and a new scheme of combination is said to have been mooted with a view to checking the weakening influence of the "outside" competition.

With the important exceptions of coal, iron, clays, and slate, the natural stores of minerals in England are small as compared with the United States, for example. Thus, apart from the extractive industries engaged in the production of the former minerals, the possibilities of even the simplest forms of horizontal combination are very small indeed, if only on account of the natural

paucity. England is far too dependent upon foreign supplies of some of the principal metals, such as tin, copper, iron, and lead, in order to meet the home consumption, to make possible any effective form of industrial combination between the home firms engaged in their extraction. In the case of some of the more common products, which are extracted from the earth in almost every part of the country, it is clear that their very abundance makes against combination of enterprises engaged in extracting them, *e.g.* the number and varied circumstances of the enterprises producing slate, and the comparative facility with which new quarries can be opened up, makes against the formation of effective combinations of slate producers. In addition, the position of the home industry is unfavourable as regards the competition of foreign producers and also that of the many substitute commodities which are being placed upon the market. The position is not the same as that in the United States, for example, where the monopolization of vast deposits of mineral wealth has been possible, so that the enterprises controlling these are thereby placed in a very favourable position. Even as regards the extraction of iron ores, it has been shown that England is dependent upon imports for over one-third of the home consumption. While English engineers continue to prefer acid steel, and the foreign non-phosphoric ores, this dependence must continue. The conditions governing the extraction of iron ore are also very varied and peculiar, since it is largely carried on by enterprises with a variety of interests in other directions.

Roughly speaking, quite one-half of our mineral production is made up by coal, and it has been seen that even temporary combinations are very difficult to establish in the coal industry as a means of restricting competition effectively and continuously. Successful amalgamation is still more difficult of attainment, as experience has shown, so that it is not surprising that

the development of a "trust," or, in fact, of any form of monopolistic combination, has been lacking in this industry. Herein the contrast with U.S.A. or with Germany is very striking.[1]

However, the amalgamation of existing colliery enterprises has been proposed and even attempted in England under several forms; *e.g.* in 1893 Sir George Elliot proposed to convert the whole of the firms engaged in the English coal industry into a national amalgamation, with a capital of £110,000,000.[2] This occurred just about the time of the "Coal Crisis," yet neither the newspapers, nor the public, nor coal-owners seem to have been very enthusiastic in the matter, and it appears to have been abandoned as being impracticable. Quite apart from the unfavourable "external conditions" indicated earlier,[3] the very article in which the scheme and its advantages were set forth also indicates, between the lines, the difficulties which have tended to make amalgamation a rarely attempted policy in the coal industry of England, except in cases where special conditions are present. The difficulties which are so strongly operative even in attempts to form temporary combinations on a local scale apply even more strongly to the case of an amalgamation attempted on "national" lines, on account of the development and general working of the industry. It is hardly correct to say that the question of the feasibility of an amalgamation in the coal industry "turns mainly upon the advantages which the lessees or coal-owners might hope to gain in return for their co-operation." It may be allowed that great savings could be made by means of the production of coal on a larger and more scientific scale, and also from the improved organization of distribution, which are possible to a considerable extent through the combination of enterprises; so also there would be a direct gain from the cessation of price-

[1] Cp. *supra*, pp. 225–40.
[2] *The Times*, September 20, 1893. [3] Note 1.

cutting and the internecine competitive practices. Every coal-owner would agree that these "advantages of co-operation are highly desirable," if only they were easily attainable in actual practice. In spite of the elaborate scheme propounded, it was rightly observed that "it is clear that many obstacles remain to be disposed of before it can become possible for the proposals embodied in the scheme to be carried into practical effect, and the full practicability of the scheme established. . . ." [1] Reading between the lines, some of the standing obstacles to amalgamation of colliery firms become evident; *e.g.* "there remain two very important points for consideration. One is the question of management . . . the other is the still more delicate and knotty point of the appraisement of the values of the existing properties, together with the manner in which the profits of the proposed amalgamation should be shared. . . ." [2]

Truly these are "knotty" points if only a local amalgamation were proposed; where an amalgamation of colliery firms on a national scale is undertaken they present almost insuperable difficulties. In the particular instance referred to, a "Central Representative Council" was put forward as the board of management. The country was to be divided into thirty "districts," and the members were to be elected to the Central Council by each district according to the output of coal. The unit of representation was to be a mutually determined number of tons of coal, viz. one member for every 5,000,000 tons. Such a scheme would seem to be difficult to work in practice even on a local scale. The output of a colliery is not a fixed amount, but varies according to the state of underground workings and the difficulties—faults, water, hard seams, etc.—encountered. Even in any one district new collieries are opening up, and the circumstances of existing collieries are changing constantly. Again, certain districts possess

[1] *The Times*, September 20, 1893, p. 4. [2] *Ibid.*

special advantages, just as others are hampered by peculiar disadvantages. Changing circumstances have to be taken into account of such number and variety that any "grouped" management is likely to be most unsatisfactory. When one considers that the independent collieries numbered quite 3000 in 1893, were scattered in location, and differed very widely in circumstances, it is difficult to see how any bases of combination could be satisfactorily determined upon by mutual arrangement between the coal-owners. To secure this agreement by means of joint action between shareholders and miners appeared to be equally hard.

A number of the difficulties which may arise from valuations or arrangements, bearing reference to the productive capacity or profits of the firms to be amalgamated, are indicated by a recent criticism of a scheme for fixing the wages of miners in the South Wales coalfield, according to the profits or earning capacity of the successful collieries. It was pointed out by an authority like Lord Aberconway, better known as Sir Charles B. Maclaren, Bart., that "in most trades a certain definite return upon capital can generally be expected from a given number of machines worked under ordinary conditions, and you may fairly estimate this by the number of lathes, looms, or spindles that compose the manufacturers' plant. But with collieries the case is wholly different, as no two pits work under the same physical conditions, and in all cases the human factor has much influence on the actual result. . . . The profits of a colliery depend upon natural conditions which no man can foresee. The quality of the seam, the roof, the floor, water, gas, broken ground, distance from pit to port of shipment, and twenty other circumstances make the difference between admittedly high profits and absolute loss."[1]

Thus a sometimes insuperable difficulty facing either

[1] *The Western Mail*, February 4, 1913.

a national or local amalgamation of colliery enterprises is that of securing "the satisfactory appraisement" of the values of existing colliery properties, and a satisfactory basis for the allotment of profits. A criticism of the scheme of 1893 rightly pointed out that the question of appraisement "has been looked upon as in some respects one of the most practical of the difficulties to be met." [1] Despite this it was considered that "valuation by a board of expert valuers would be an easy and a satisfactory solution of the problem"; in fact, quite "an everyday procedure," taking 15*s.* per ton as a basis for determining the capital value of the total output of coal.

But a significant admission is noticeable in this connection: "Many collieries will be found to be worth more than the 15*s.* per ton, others, again, will be worth less; there are some exceptional circumstances it will be the duty of boards of experts to take into consideration." [2] Unfortunately, the relegation of difficulties to boards of experts is by no means necessarily the solution of them; moreover, sometimes the tangle is only made the worse thereby. It must be admitted that the colliery proprietors and shareholders did not appear very anxious to seek the services of expert valuers for this purpose, in spite of the fact that they were assured of "a 10 per cent. dividend as a practical certainty," and even "15 per cent. or over if the Board of Trade allowed it." They preferred to rest satisfied with what the promoters of the scheme termed "their present chances of a high rate of profit." As regards the appraisements of colliery properties that have been made, in some cases these have proved unsatisfactory, and the amalgamations have been heavily handicapped by the serious difficulties of "over-capitalization" right from the very start. It appears that these difficulties cannot well be avoided where vendor-firms insist on high purchase prices; where

[1] *The Times*, September 20, 1893, p. 4. [2] *Ibid.*

the combining firms agree mutually to become interested in a holding company, according to the amount of their capital, the dangers of over-capitalization are largely avoided. The difficult situation arises where a number of vendor-firms sell out to the promoters of an amalgamation at the highest prices they can exact according to the terms of a valuation that may prove later to be unsatisfactory. The newly formed amalgamation thus becomes over-capitalized, and unable to earn profits on an inflated capital. The importance of the form of organization adopted by the combine under such circumstances, largely on account of the difficulties of valuation, is well illustrated in the case of the Cambrian Combine in the steam coal industry of South Wales.[1]

When the form of organization is defective in addition to the hampering influence of "over-capitalization," the injurious effect upon the financial position of the amalgamation is well-nigh fatal. Of course, this is a condition which may be considered to apply in some ways to amalgamations in industries other than the coal industry, although it is in the latter that the risks are the greatest. In July 1902 an amalgamation was formed from some twenty-four Scottish collieries, and the shareholders were promised increases in dividends, although over 10 per cent. had been paid during the three previous years by the constituent firms. Yet, curiously enough, no dividends were paid in 1903, and this colliery combination found itself in a precarious financial position. By 1904 the shareholders had sought in vain an order for winding up, and fresh issues of shares had been called for in order to provide working capital. The amalgamation was unable to obtain for the shareholders the success they obtained when the constituent companies were independent. Other instances of amalgamations formed by purchase from vendor-firms through valuations point to the same conclusion—that the diffi-

[1] Cp. *infra*, pp. 286–97.

culties of carrying out a satisfactory valuation of existing coal properties for an amalgamation of any considerable size are very considerable indeed, and may endanger the success of the fusion. The uncertainty as to how the properties will "pan out," the limitations which may be placed upon production by the occurrence of unexpected difficulties on account of natural conditions, the varying circumstances of collieries as regards the underground workings, which human foresight cannot always provide against, make it very difficult to determine a satisfactory valuation. For there are incidents peculiar to coal production—it varies a great deal in quality, but in quantity, its practicable working area is limited, its steady and irretrievable exhaustion is accompanied, as it must be, by a consequent rise in cost of production, and also by greater competitive difficulties in world-wide markets.[1] These "peculiar incidents" make the difficulties of valuation very great, if only on account of natural reasons. A colliery may still contain coal, but the depth of the shaft, the distance of workings from the shaft, the occurrence of "faults," springs, rubbish, and hard or broken seams may make the coal unprofitable to work.[2] Quite apart from these "natural" difficulties, the task of satisfying the vendor companies with what they consider a fair purchase price has proved a great difficulty, since the opening of a colliery involves a vast outlay of fixed capital, which is irretrievably fixed or sunk, and has to be recouped during the comparatively short life of a colliery; and this has to be done quite apart from the payment of extremely heavy standing charges. Thus it is not surprising that few amalgamations have taken place, and that some which have been effected by appraisements for purchase through promoters have been dogged by the difficulties of over-capitalization.

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[1] *South Wales Coal Annual*, 1911, p. 1.

[2] Cp. *Coal Pits and Pitmen* (Boyd), *Coal Mining* (Galloway), *The Eight Hours Day* (C. M. Percy).

The Royal Commissions on the Coal Industry certainly comprised the best authorities, but even under these favourable conditions the making of estimates as to the production of coal has proved a dangerous procedure in many cases, judging by subsequent events, on account of the development of the coalfields and the improvements in the methods of coal mining.[1] Largely on account of the difficulty of securing a satisfactory appraisement of coal properties for the purpose of effecting the amalgamation of colliery firms on any extensive scale, it has been said that in its financial aspect such a scheme must be regarded as an immense conversion scheme; in such schemes, as is shown by experience with the conversion of many public debts, arguments in general terms are not satisfactory in individual application at all times.[2]

The difficulty of securing a satisfactory appraisement of the properties which are to be amalgamated is only aggravated by that of arriving at any satisfactory bases for the allotment of profits. Even in the case of temporary combinations this is found to be one of the hardest problems to be solved in order to determine the "base-agreements." The strong firms consider that their power has been under-estimated, and they have not been allowed a sufficient "participation"; the weak firms are equally dissatisfied. Some agreement is patched up, the aggrieved parties resolving to secure their rights by secretly evading it. As has been seen, the amalgamation involves a great deal more, and firms will not yield up identity and individual rights easily and readily unless they have exacted the utmost compensation, or have good prospects of profit. This adds another difficulty to the many which tend to militate against successful amalgamation in the coal trade, where the expenses that must be covered are particularly heavy.

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[1] Cp. *London Evening News*, February 20, 1911, *The Coal Trade and Coal Commissions.* [2] Cp. *The Times*, September 20, 1893, p. 4.

Again, one of the most practical questions is whether the colliery proprietors would be disposed to consider that they serve their own interests by agreeing to an amalgamation of their properties. As to the scheme of 1893, the colliery proprietors generally seem to have preferred independence or to have considered the scheme to be impracticable. This difficulty stands in the way of most of the amalgamations which have been projected in this industry. Prospects have to be sufficiently alluring, and proposals sufficiently practicable, in order to have the necessary effect. This is especially the case in the coal industry, in which "individualistic organization" seems so well established and in many ways so necessary. Proposals for combinations in the coal industry, both temporary and permanent, have been made repeatedly ever since the dissolution of the Vend of Newcastle in 1844, yet colliery owners generally do not seem to have adopted a very favourable attitude. A great variety of forces have tended too strongly in the opposite direction. The amalgamation scheme of 1893 was put forward as a boon to the public as well as to the coal owners and the miners, yet one comment in this respect was that "the consumer might be pardoned for regarding it with suspicion." [1] It has been seen how the whole fabric of industry largely rests upon the basis of a uniform supply of coal at reasonable prices, and therefore a large number of varied interests might unite to resist any movement that seemed likely to interfere with the coal supply.

The above instances may serve to indicate some of the factors which tend to militate against successful amalgamations in the coal industry. The fact that their operation is intensified by the influence of "external conditions" which are unfavourable, even to effective temporary combinations,[2] makes it more easy to realize why the formation of amalgamations, much less "trust"

[1] *The Times*, September 29, 1893.
[2] Cp. *supra*, pp. 222–40.

amalgamations, has rarely been attempted on any considerable scale in this industry save in cases where special conditions are present. The strength of their influence is better realized when their operation is observed as regards the amalgamation of colliery enterprises even on a local scale. The proposal for the "national" coal trust of 1893 has become a thing of the past, its existence even as a proposed scheme was very brief and unimportant, and it never developed beyond the stage of proposal, much like a similar scheme put forward in 1888.[1] As has been seen, some other attempts have not resulted satisfactorily, and the present movement towards the formation of an amalgamation, or perhaps a "trust" amalgamation—The Cambrian Trust Limited —in the South Wales coal industry must therefore be followed with the greatest interest. Although the development of this amalgamation, of itself, furnishes sufficient material for a separate study, the salient points of interest may be briefly noted here. Apart from its development as amalgamation, additional interest attaches to the subject for several reasons; *e.g.* a somewhat similar attempt to amalgamate the collieries producing anthracite coal in South Wales failed even after negotiations extending over quite two years. On April 30, 1904, it was stated that there was an expiration of the options which Anthracite, Limited (the promoters of the proposed South Wales Anthracite Combine), held on various properties.[2] In May, 1905, there was a meeting of the promoters and colliery owners interested in the proposed amalgamation, who concluded that the scheme was bristling with difficulties.[3]

Moreover, earlier attempts to control the steam coal industry of South Wales by means of industrial combination have proved unsuccessful; *e.g.* the temporary combination proposed by Mr. John Nixon in the

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[1] *The Times*, September 23, 1893; also the "City Article," *The Times*, October, 1888. [2] *The South Wales Coal Annual*, 1905, p. 31.
[3] *Ibid.*, 1906, p. 38.

'eighties for the purpose of controlling output and prices,[1] and the proposal which was brought forward for controlling the output in the steam coal trade (1896),[2] or the projected small coal combine of 1904.[3]

The latest attempt to establish an amalgamation of steam coal producers is all the more interesting in that within this branch of industry there are many conditions which are favourable to schemes of industrial combination. For example, the area within which steam coal is worked in South Wales is very limited and concentrated as to location, being situated in Glamorgan and West Monmouth. The existing firms are therefore in close proximity to one another, united by ties of local interest, much alike in general circumstances, and frequently brought into touch with one another through the existence of the South Wales and Monmouthshire Coal Owners' Association, established for joint action in various matters; in addition, the existing companies are sometimes connected through their directorates, shareholders, or selling agents. Above all, it has been seen that South Wales steam coal possesses something of a monopoly in distribution, to such an extent that the influence of foreign competition is sometimes negligible even in foreign markets. The proximity of the collieries within this steam coal area to excellent transport facilities, and to seaports with the latest equipment for expeditious docking and loading gives them a further advantage in respect of freights and distribution generally. The existence of a group of very efficient selling agents with connections in all the principal markets greatly facilitates the distribution of a product so largely in demand on account of its valuable natural properties. In addition, the above "protective" or "differential" advantages are largely increased in that the greater portion of the steam coal area is already taken up by various properties.

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[1] *The Life of John Nixon* (Vincent), pp. 233–5, *supra*, pp. 238–9.
[2] *Some Notes on the Coal Trade* (D. A. Thomas).
[3] *The South Wales Coal Annual*, 1905, p. 33.

The moving spirit of the "Cambrian Combine" is Mr. D. A. Thomas, the well-known coalowner, and the nucleus of the amalgamation was the Cambrian Collieries Co., Ltd. The interests of this enterprise have developed so rapidly that in less than some seven years, from being in control of one colliery company having an output of a million tons per annum, the Head of the Cambrian Combine has so enlarged the position that he is to-day either wholly or partially in control of the following concerns: [1]

Steam Coal Producers.

The Cambrian Collieries, Ltd.
The Glamorgan Coal Co., Ltd.
The Naval Colliery Co., Ltd.
The Britannic-Merthyr Steam Coal Co., Ltd.
The Albion Steam Coal Co., Ltd.
The Fernhill Collieries, Ltd.
The Duffryn Rhondda Coal Co., Ltd.
The Ebbw Vale Steel, Iron & Coal Co., Ltd.
The Rhymney Iron & Coal Co., Ltd.
The Cynon Coal Co., Ltd.

Coal Exporters, Selling Agents, Pit-wood Importers, and Ship Brokers, etc.

Messrs. Thomas & Davey.
„ Lysberg, Ltd.
„ L. Gueret, Ltd.
„ Amaral, Sutherland & Co., Ltd.

It is interesting, however, to notice here that the movement towards the temporary combination of enterprises engaged in the South Wales coal industry appeared first in the branch engaged in the production of steam coal. Similarly, it is also in this branch that the most recent and successful attempt has been made to set up an amalgamation. Coal was worked in South

[1] *The South Wales Coal Annual*, 1911, p. 19.

Wales at least as early as the sixteenth century, but the real beginning of the modern industry dates from about 1757, when coal was extracted at Dowlais for the smelting of iron ores.[1] Until 1829 the production of coal was carried on principally by "ironmasters," and practically limited according to the requirements of the ironworks. From 1829 on a new element appeared through the opening of collieries to produce coal solely for sale purposes, its steaming properties having been tested with such good results as to assure it a special market. These collieries were the "steam coal collieries" opened up first in the Aberdare district and then in the Rhondda Valleys. For some time great antipathy existed between these "sale collieries" and the collieries of the firms producing coal for smelting purposes, because their interests differed, and also because they outbid each other for the supply of labour, which was scarce at this period. The steam coal or sale collieries found great difficulty in keeping peace with their workmen, and in order to strengthen themselves as regards labour, and also against the firms producing coal and iron, they combined to form the Aberdare Steam Coal Collieries' Association (1864). This was the first attempt at joint action between the coalowners of South Wales. Later on, after tremendous difficulties, Sir William Thomas Lewis (Lord Merthyr) succeeded in reconciling the "sale colliery" owners and the ironmasters who also produced coal for sale, and in uniting them in one association—The Coalowners' Association of South Wales and Monmouthshire (July 8, 1873).[2]

As has been seen, this body has never attempted to regulate output, prices, or trade conditions generally by means of combined action, although the interests of firms producing coal and coke for sale alone, and those of firms which produce coal for use and also for sale are now alike in many respects. Curiously enough, the

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[1] *The South Wales Coal Annual*, 1903.
[2] *The South Wales Coal Trade*, 1888 (Charles Wilkins).

recent attempts at industrial combination have been directed mainly towards the combination of steam coal producers. In 1896 Mr. D. A. Thomas brought forward a proposal for regulating the production of steam coal automatically, and thus influencing prices, by means of a joint organization which really represented a form of "Kartell" or temporary combination, comprising the principal steam coal producers.[1]

However, the proposal did not mature, and it has given place to an effort to set up a form of permanent combination as the best means of effecting the desired regulation of the steam coal trade by means of joint action between the producers. At the close of 1906 Mr. Thomas controlled only the Cambrian Collieries, Ltd. In 1907 the Cambrian Trust, Ltd., was registered with a nominal capital of only £120,000, and on the 20th of the same month the Glamorgan Coal Company, Ltd., sold out their interest to Mr. Thomas, acting on behalf of the Cambrian Trust, Ltd. Soon afterwards the firm of Messrs. Gueret, Ltd., purchased the main interest in the Albion Steam Coal Co., Ltd., apparently on behalf of the Cambrian Trust, Ltd., while Messrs. Lysbergs, Ltd., was to act as a sales' agency for the production of the latter. Messrs. D. A. Thomas and T. J. Callaghan, acting for the Cambrian Trust, next purchased a controlling interest in Messrs. L. Gueret, Ltd., which firm controlled the Albion Steam Coal Co. and possessed extensive connections in the steam coal trade. In July 1908 the Cambrian Trust, Ltd., next secured a controlling interest in the Naval Colliery Co., Ltd., and on August 5, 1909, a London agent of the Cambrian Trust became a Director of the Albion Steam Coal Co. In order to extend its influence still further the Cambrian Trust, Ltd., next obtained a controlling interest in the Britannic-Merthyr Coal Co., which possessed an old-established reputation for steam

[1] *Some Notes on the Coal Trade—with special reference to South Wales and Monmouthshire* (D. A. Thomas), *passim.*

coal all over the world (April 1910); Messrs. D. A. Thomas, L. Llewellyn, and G. H. Bullen, respectively Chairman, General Manager and Secretary of the Cambrian Trust Co., Ltd., became Directors of the Britannic-Merthyr Co. Shortly afterwards Messrs. D. A. Thomas and J. W. Beynon purchased the various collieries of Messrs. Watkinson, Ltd., and registered them as a new constituent company—the Fernhill Collieries, Ltd.—with nominal capital, and Messrs. D. A. Thomas and J. W. Beynon as Life-Directors.

The position of the Combine was greatly strengthened on the side of distribution in that it had been brought into close touch with the firm of Messrs. T. Beynon & Co., Ltd., one of the leading agencies in South Wales for the sale of steam coal. In November 1910, Messrs. D. A. Thomas and F. L. Beynon were appointed Directors of the Ebbw Vale Steel, Iron and Coal Co., Ltd., which event marked the extension of the influence of the Cambrian Trust representatives into Monmouthshire, and also the inclusion of one of the old-established firms controlling both ironworks and collieries. For, in addition to supplying the demands of its own iron and steel works, the Ebbw Vale Co. produces an enormous quantity of high-class coal for sale in the open market. Since this period the Cambrian Trust has secured further accretions of strength, and, above all, its properties constitute a very compact area within the best steam coal districts. Its financial position is highly satisfactory, and very important developments in organization are projected.[1]

It is interesting to notice that there has been included within the sphere of the Combine several of the leading firms of "coal exporters" or "selling agents" in South Wales like Messrs. Lysbergs, Ltd., and Messrs. Thomas & Davey. This appears to be a diplomatic move of the greatest significance; for it helps to secure the position of the combined collieries in that it furnishes a means of bridging the gap which has long existed in

[1] *The Western Mail*, February 21, 1913.

the coal trade between the work of production and that of distribution. As has been indicated, right from the beginning of the South Wales coal trade the business of selling the coal and arranging for its transport has been largely handed over by the producing companies to the various firms, which act as selling agents and arrange for freights, and have trade connections at the various ports and market centres throughout the world. Though the practice appears to have been borrowed originally from the Newcastle coal trade, it has now become a firmly-established characteristic of the coal trade in South Wales, a great proportion of the sales, especially those for export—so important an item in the South Wales trade—being effected by means of these intermediary agencies. The inclusion of several of the leading firms of this kind within the sphere of the Cambrian Trust, Ltd., largely completes its control over the chain of processes through which the coal passes from the mines to the consumers, makes possible the absorption of intermediate and collateral profits, and helps to secure the market position of the Combine. Further, the fact that these selling agents may arrange for the sale of coal produced by a number of companies, and are constantly in touch with the whole of the trade, indicates a means which may be used to facilitate any negotiations between the coal-producing firms.[1]

It appears that so far the powers of the Cambrian Trust, regarded as a form of permanent combination, are not monopolistic in character, but its possibilities are very considerable. As has been indicated from time to time, the shares of the constituent firms have largely increased in price, and, as a matter of fact, those of firms which have become parties to smaller amalgamations have increased also.[2] It appears that the opinions of the "coal circles" are favourable to the amalgamation movement. Moreover, it has been seen that the cir-

[1] *The South Wales Coal Annual*, 1913, pp. 1–2.
[2] *The Western Mail*, March 25, 1910; February 21, 1913.

cumstances of this branch of industry constitute very favourable "external" conditions of combination.

The form of organization adopted by the Combine seems to be highly suited to the circumstances of the case, so as to avoid the dangers which largely helped to bring about the failure of other attempts to form amalgamations in the coal industry. In many ways the Cambrian Trust, Ltd., seems to approximate to a "holding company"; its capital was comparatively small and almost nominal, while the control of the combining companies is vested in a representative directorate; the personnel of this and of the enterprises coming within its sphere coincide very largely. The difficulties and dangers of valuation have been largely avoided through the coincidence of interests, which considerably facilitated the formation of the Combine. In cases where permanent combination is carried through by means of the holding company form of organization, the shareholders may remain practically the same; it is the transference and centralization of control and the powers of management that are essential. Again, the interests represented by the Cambrian Trust, Ltd., are exceedingly diverse and extend throughout the South Wales coalfield, especially within the steam coal area. This interweaving of interests, in some cases transversely through a number of enterprises and industries, is likely to operate as a potent factor in increasing the tendency towards industrial combination, especially since the linking up of various undertakings seems to be becoming quite a popular procedure in the South Wales coal trade. For, apart from the Cambrian Combine, several other amalgamations have already taken place between well-known steam coal producers, *e.g.* The United National Colliery Company with Messrs. Burnyeat, Brown & Co., Ltd.; The Atlantic-Merthyr Co., Ltd., and Locketts-Merthyr Colliery, Ltd.; The Ocean Coal Co., Ltd., with Wilsons, Ltd.; Powells' Tillery Steam Coal Co., Ltd., with Hoskins' and Llewellyns' Aber-

sychan Steam Coal Co., Ltd., etc. Negotiations for various other unions are also said to be proceeding.

Should the Cambrian Trust, Ltd., be able to make some arrangements with such companies as these, or with companies like the Powell Dyffryn Coal Co., Ltd., Messrs. Partridge, Jones & Co., Ltd., The Tredegar Iron and Coal Co., Ltd., Messrs. Burnyeat Brown and Co., Ltd., or other large enterprises, and also continue to develop its own properties and resources, there seem good prospects of some regulation of the steam coal trade becoming practicable. For it is reported that "persistent rumours are circulating at the Cardiff Coal Exchange that negotiations are being undertaken by the Cambrian Trust, Ltd., for the acquisition of other properties." This is probably the aim of those who are directing its development, and if their endeavours continue to meet with the success which has attended them hitherto, there is every prospect that the desires expressed in 1896 may yet be realized in some degree.[1]

It is possible that industrial combination may find favour with South Wales coalowners and shareholders owing to the success of the Cambrian Combine, and also to the conviction which colliery owners are said to be realizing; viz. that they must combine more closely in order to offer a more effective resistance to the various interests with which they come in contact and sometimes into conflict. Of recent years the difficulties between masters and men have become acute in the South Wales coal industry in particular, aggravated in some cases by special causes. It would appear that some form of organization for establishing some degree of joint regulation of the steam coal trade of South Wales, particularly as regards the export trade, might be of the greatest advantage to the colliery enterprises, the employees, and the community generally.

This appears to have been the general result of the working of the Rhenish-Westphalian Coal Syndicate,

[1] *Some Notes on the Coal Trade.*

which has regulated the trade of Germany's principal coalfield very effectively for a long period.[1] Similar results might be possible in South Wales if only those engaged in the coal trade could be induced to reconcile their conflicting aims and interests. This might also facilitate the solution of some of the most urgent of the problems facing the trade at the present time.

The Cambrian Trust, Ltd., seems to sum up the many attempts which have been made to regulate the steam coal industry of South Wales by means of various forms of industrial combination—attempts which were first made by Mr. John Nixon, the "pioneer" of the South Wales steam coal trade. As has been indicated, "He and other colliery proprietors of South Wales fought and fought hard to establish control of output." They had many meetings, and finally an independent engineer was appointed to inquire into the capacity of each colliery and into the circumstances affecting the power of output of each colliery, with the object of assigning to each a maximum output, and so of adjusting the supply to the demand. The result was that "such dissension was created among the colliery owners that the scheme was abandoned," and considered to be unsatisfactory and impracticable on account of the conditions of the trade.[2] In Mr. Nixon's time other forms of temporary combination to regulate competition were attempted, but all in vain; *e.g.* the next scheme, which took the form of a society or association of which Mr. Nixon was President, had for its object the periodical fixing by agreement among the coalowners of minimum prices for coal. This scheme also proved to be a "futile experiment." For such reasons the writer of the life of John Nixon concluded that attempts to control the industry involve several weaknesses which must cause them to break down. However, the work laid down by the late Mr. John Nixon has been taken

[1] *Monopolistic Combination in the Coal Industry* (Walker); *infra*, pp. 376–386, Appendix.

[2] *The Life of John Nixon* (J. E. Vincent), pp. 232–6; and *supra*, pp. 222–240.

up by others, and despite the unfavourable factors of the coal trade which may expose their schemes to failure, as one writer has put it, events may some day furnish the realization of his aims in this important connection. There should be some means to prevent the recurrence of the position wherein we export "large quantities of coal at less than cost price, giving away to the foreigner, with insane prodigality, our mineral wealth—wealth that is by no means inexhaustible and that cannot be replaced." [1] If it be true that the operation of the Eight Hours Act in South Wales has "been at the bottom of most of the troubles that have arisen in the coalfield," curtailing wages and largely increasing the expenses of the colliery firms,[2] then industrial combination might provide a means of reducing expenses and of relieving the position. For such reasons it has been stated that in order to reduce their working expenses colliery enterprises are tending to consider combinations more favourably.

As has been seen, the circumstances governing the production and distribution of steam coal in South Wales constitute favourable "external" conditions of combination, and also a number of "differential advantages" are present. Should some form of joint regulation ever be developed it might prove a boon to all interested in the coalfield. Amid the various unsettled conditions, it seems possible that some regulation of competition by means of joint action of collieries within this coal-field may be utilized with advantage. The evils of unrestricted competition have long been a cause of complaint; thus, it was the opinion of one writer, as far back as 1883, that "while the men have a certainty as to the amount of wages they are to be paid for their labour . . . the masters have no certainty as regards the price they may receive for their coal. The competition in the sale of the coal is far greater than that in the

[1] *Some Notes on the Coal Trade* (D. A. Thomas), p. 7.
[2] "Review of the Coal Trade for 1910"—*Colliery Guardian*, March 25, 1911, p. 91.

working of it, and as there is no arrangement or regulation between the masters as to a scale of prices for their products, every device is resorted to when trade is somewhat dull in order to procure a sale; and it frequently happens that one firm will undersell another sixpence and one shilling per ton. If, however, a basis could be agreed upon or an understanding come to by which the selling price of coal could be determined, the Welsh coal-master would be more certain of a profit, and the workmen would be less likely to have their earnings reduced. The consumption of South Wales Steam Coal is unquestionably a necessity that, according to present discoveries, cannot well be avoided, so that if the masters united upon the question of price in the same way as they have upon the standard of wages, there can be no doubt but that the result would be most advantageous to not only the masters and men, but every one connected with the district of South Wales; and the splendid Welsh steam coal would not be 'given away,' as is now frequently done." [1]

The above reference reflects an interesting light upon the present position, particularly as regards the relations existing between employers and employees in South Wales. Various leaders of the miners of Great Britain, and also of those of Continental countries, have agreed that the competition, over-production, and price-cutting as carried on between colliery owners has a disastrous effect upon wages.[2] The Employers' Liability Acts, the stricter Coal Mines Regulations, the Eight Hours Day Act, the Minimum Wage Act, the Insurance Act, the competition of foreign collieries in neutral markets, often through combined action, and a number of other factors, have greatly increased the burdens of employers in the coal industry. When prices are high the miners desire advanced wages, when prices fall they

[1] *Transactions of the Royal National Eisteddfod of Wales*, August 1883, pp. 497, 481-503.

[2] Cp. *Reports of the International Miners' Congresses; The International Regulation of Competition in the Coal Trade* (Lewy).

resist reductions. Throughout the country the colliery companies must tend to draw closer together, if only in self-defence—a course of action which might well prove ultimately to be to the interest of the community generally.

Amidst the bitter struggles and the unnecessary suffering caused by the many strikes that have taken place of recent years within the coal industry, especially in South Wales, it cannot but be suggested that some regulation of internecine competition by the joint action of coalowners might present at least a partial solution of various difficulties. Under the present conditions the colliery owners cannot always secure the best prices, and it is generally agreed that the miners and the community ultimately share the cost of the competition between colliery-owners. Thus there is good reason to suppose that if some form of joint organization could be adopted between them, by means of which greater stability could be introduced into the coal trade, the results would ultimately prove beneficial to the industry and the community generally, and also might minimize the causes of dispute between masters and men. For they all appear to gravitate around questions of prices in their ultimate analysis.

The extractive industries have been mainly considered so far; typical instances taken from the manufacturing industries lend further support to the conclusions already indicated as regards the development of the "trust" amalgamations, for it appears that within them also the existing "trusts" mainly owe their successful development (*a*) to the operation of favourable "external" conditions of combination, (*b*) to the existence of some "differential advantages" in production and distribution, (*c*) to the efficiency of the organization of the "trust" for the administration and management of production and distribution. It is seen that through the absence of circumstances in an industry which constitute favourable "external" conditions, "trust" amal-

gamations are impracticable over a wide range of industries. These have proved unfavourable for the development even of effective temporary combinations, *e. g.* the tin-plate industry, the manufacture of engineering products, semi-finished iron and steel goods and general hardware, spinning and weaving of cotton and woollen goods (except fine cotton spinning and doubling), the manufacture of glass, coarse paper, pottery, carpets, etc.

As has been seen, the extent or sphere of the "trust" development generally is limited in England as compared with the United States. Thus, in the industries where "trust" amalgamations have been developed with success, it is found that there exist special circumstances which are highly favourable to their development—in most cases "normal" circumstances of the industries. Above all, the influence of the artificial "fostering" conditions operative in U.S.A. and Germany is conspicuously lacking in England. As has been indicated, any attempts to form even temporary combinations between the enterprises engaged in the spinning and weaving branches of the woollen industry, "would be quite hopeless in every case." [1] Thus it is a very significant fact that another "secondary" branch of the woollen industry—that concerned with the dyeing of wool and cloths—has proved a very favourable sphere for the development of "trust" amalgamations. For it has been shown that the enterprises engaged in each of its main sections have been combined into different amalgamations; also that the control of these amalgamations over their respective sections of the dyeing industry became so complete that they might fairly be ranked as "trusts," according to the terms of the definition adopted earlier; viz. the Bradford Dyers' Association, Ltd., which is said to control the bulk of the cloth-dyeing trade; the British Cotton and Wool Dyers, Ltd., engaged in dyeing warps and hanks; the

[1] Cp. *Tariff Commission Reports*, Vol. ii, § 2179.

Yorkshire Indigo, Scarlet, and Colour Dyers, Ltd., the English Velvet and Cord Dyers' Association, Ltd., the Leeds and District Worsted Dyers, Ltd.[1]

It is seen that the dyeing trades of the English woollen industry have proved one of the most favourable spheres for the development of amalgamations, taking a general view of the position. They also present a striking contrast to other primary branches of the woollen and worsted industries—"outside the dyeing trade combinations have either been unsuccessful or comparatively small."[2] Moreover, the amalgamations in the dyeing trades have been successful enterprises, especially after some of the defects of their original organizations were corrected. For the purposes of this inquiry the Bradford Dyers' Association might be taken as a typical amalgamation; for its development seems to have been "determined" by circumstances which are in many ways representative of those operative within the dyeing trade generally.

It is seen, first of all, that the circumstances of the firms engaged in the dyeing industry constitute very favourable "external" conditions of combination. The enterprises engaged in the various sections were comparatively few in number, *e. g.* in the cloth-dyeing section, wherein twenty-two firms controlled the greater portion of the trade. The indigo- and scarlet-dyeing firms numbered about a dozen, as also the firms engaged in worsted dyeing in the Leeds district. The dyeing processes of the woollen industry must be carried on near the other processes of the industry, for the sake of securing speed and efficiency in production and distribution.[3] Thus the cloth-dyeing trade was concentrated in location in the neighbourhood of Bradford, so that the existing firms were also in close proximity,

[1] *U.S. Industrial Commission Reports*, Vol. xviii, Chap. ii, pp. 14, 34; also *The Trust Movement in British Industry* (H. W. Macrosty), Chap. vi, pp. 155–171, *passim*.

[2] *The Woollen and Worsted Trades* (Clapham), p. 153 and *passim*.

[3] *U.S. Industrial Commission Reports*, Vol. xviii, p. 49; also *note* (1).

much alike in general interests and circumstances, and frequently brought into touch with each other in the course of business. Largely on this account, the development of a form of temporary combination between the firms engaged in cloth-dyeing was greatly facilitated; this is also true of the other branches of the dyeing industry. These temporary associations furnished a valuable basis for the subsequent establishment of amalgamations. Above all, potential competition cannot easily become actual in the cloth-dyeing trades, either from the establishment of new firms in the Bradford district, or least of all from foreign firms, or from firms which might be established elsewhere in England. These circumstances are such that they not only furnish favourable "external" conditions of combination, but also constitute "bases of monopoly" easily available to an amalgamation of existing firms, which alone could utilize them to the fullest advantage. Thus it has been said that as regards competition from a distance, the position of an amalgamation of existing firms is considered very secure because of their "differential advantages" as to production and distribution.

For example, the existing establishments are most favourably situated as to location, since the "cost of cartage or carriage and the extra time required in conveying goods to and fro" between the dyers and customers is at a minimum.[1] Similarly, they possess differential advantages as regards production which further strengthen their position. "The trade is of so detailed and technical a character that it is of the utmost importance that the dyer should be in daily touch with his customers, whose goods he is treating."[2] Also, "the location in the district of a large number of trained and experienced workmen," who can handle expensive dyes in the most economical and skilful manner, "due to the fact that the trade has been so long established there, and to the highly technical nature

[1] The Prospectus of the Bradford Dyers' Association (Ltd.). [2] *Ibid.*

of the processes," represents a special circumstance which is decidedly a further "differential" advantage in production in favour of the existing establishments.

The latter are also favourably situated as regards the supply of raw materials, *e. g.* they have available privileged supplies of water, for "the supply and the nature and quality of the water obtainable is undoubtedly of great importance, and appears to be essential in the treatment of certain articles."[1] This supply of water is limited through natural conditions, and the provisions against the further diverting and pollution of streams constitute a serious difficulty for would-be competitors. The existing enterprises possess legal rights and privileges in these respects that cannot be reproduced without considerable difficulty. This is a very interesting and rather rare instance of how a "differential advantage" may arise in favour of the firms engaged in an industry from the peculiar combination of natural and legal conditions. The enterprises engaged in this industry also derived distinct advantages from the possession of patent processes and special dyes, and valuable experience as to their use in production; and also of special "marks" for products which have secured a world-wide reputation for excellence.

Those acquainted with the great variety of the productions sent from the establishments in the Bradford Dyers' Association can realize the tremendous importance of highly prized and carefully protected trade-marks in this branch of industry. They seem to constitute a basis around which the fabric of distribution largely turns. The great trade importance of the trade-marks is reflected in the frequent complaints that unscrupulous foreign traders injure English firms by copying these "marks." This is a fact which seems to apply to the textile industries generally to a very considerable degree. Again, the works in the dyeing industry derive a further degree of protection from

[1] Cp. Prospectus of the Bradford Dyers' Association (Ltd.).

competition through the possession of old-established trade connections with customers. Most of the firms in these trades dye the wools or cloths for merchants on scales of commission; naturally, the latter will not readily entrust valuable materials to the untried, newly arisen firms whose mark is not a well-proved guarantee of the excellence of their productions.

The above circumstances apply most strongly to the cloth-dyeing section of the woollen industry centred around Bradford, but they are also operative in the other sections of the dyeing industry of Yorkshire. They do not comprise an exhaustive list, but are typical of some of the circumstances or "differential advantages" which constitute "bases of monopoly" for the "trust" amalgamations, whose development has been assisted very considerably through the existence of such favourable conditions. They tend very decidedly to increase the initial difficulties which seem to prevent new enterprises from arising in the trade, much less of competing successfully. For, as has been stated, they give "a kind of monopoly of opportunity and ability to the existing enterprises"; so that, once combined, the position of the resulting amalgamation as regards competition at a distance has been well termed "almost unassailable." [1]

Somewhat similar are the circumstances which have determined the development of successful amalgamations of the firms engaged in the cotton-bleaching and calico-printing industries respectively. The relation between these trades and the Lancashire cotton industry generally is much like that existing between the dyeing trades of the Bradford district and the Yorkshire woollen industry. Just previous to their amalgamation, the existing firms in the bleaching trade numbered about fifty, a small number as compared with the nature and extent of their business and the regular supply of work. "The bleaching trade is one of the oldest in Lanca-

[1] The Prospectus of the Bradford Dyers' Association (Ltd.).

shire, and has proved itself a steady and prosperous one. It is also pre-eminently a safe trade. Bleachers are not buyers or sellers of the goods upon which they operate; their business being to bleach and finish goods for the merchants, is practically free from ordinary trade risks; the profits are believed to have been exceptionally stable."[1] At the inception of the amalgamation the existing firms were situated in the closest proximity to one another, all except six being within convenient distance of Manchester. Their interests and general circumstances were, therefore, fairly uniform and they were in close and constant touch with one another.

The community of interests which arose between them developed into temporary agreements between various groups of firms, and these prepared the way for the subsequent amalgamation. As was stated in the prospectus of the amalgamation, "for a great number of years past there have existed in the Manchester bleaching trade voluntary associations (*i. e.* temporary combination) for the regulation of prices in different branches of the business and for other purposes, and these have worked in harmony with the merchants, as well as to the advantage of the trade; but it has been realized that *the full advantages of co-operation can be secured only by amalgamation*, for the success of which the existence and organization of these associations give exceptional facilities."[2] The amalgamation secured the adhesion of the firms who were previously members of these associations, and also of others who were previously "outside" them. One of the differential advantages possessed by the combined establishments arose from the fact that foreign competition, or any effective competition from a distance, was almost out of the question on account of the local advantages of the existing enterprises; *e. g.* the necessity for them to

[1] Prospectus of the Bleachers' Association (Ltd.); *U.S. Industrial Commission Reports*, Vol. xviii, Appendix iv *a* and iv *b*.
[2] *Ibid.*, p. 60.

be near their customers—the local merchants—in order to facilitate the placing and execution of orders, to save freightages and economize time. These "differential advantages" were such that they not only created favourable "external" conditions of combination, but also constituted "bases of monopoly" which could be utilized to the full only by an amalgamation of the existing firms. The latter also possessed differential advantages in production through the control of an important raw material—water. For "the great and ever-increasing difficulty of obtaining an adequate supply of water renders the position of old-established bleach works a very strong one, whilst enforcement of the law against pollution of rivers tends still further to prevent the erection of new works."[1] Clearly this placed a check upon potential competition, and gave the existing firms, and the amalgamation subsequently formed between them, an advantage which made their position appreciably monopolistic in character. Moreover, a large number of the existing firms were old-established "family concerns" possessing a well-tried reputation for excellence, with "marks" known and required all the world over, and with business relations long and firmly established between them and the merchants for whom they worked. The latter would naturally hesitate to entrust their goods to untried, newly arisen firms. The above circumstances, and the difficulty of securing the capital and the various facilities requisite for the establishment of new bleaching firms with good prospects of success, tended to minimize the chances of "potential" competition becoming "actual" and endangering the amalgamation formed from the existing enterprises. This is particularly the case in view of the strength and varied resources of the combined firms; for it was considered that the formation of the amalgamation would "strengthen the cordial relations

[1] Prospectus of the Bleachers' Association (Ltd.); *U.S. Industrial Commission Reports* (Appendix iv *a*), pp. 60, 58–74.

already existing with the Manchester merchants, for, being in possession of works of every description capable of dealing at appropriate prices with every class of bleaching and finishing, the amalgamated firms will be enabled to satisfy the varying demands of the whole Manchester trade, and meet any competition from abroad or elsewhere."[1] It must be admitted that the subsequent development of the Bleachers' Association, Ltd., not only bears out the anticipations of the promoters, but also affords a good illustration of the application of the determinant conditions of industrial combination, particularly in so far as the development of the "trust" amalgamations is concerned. Of course, the efficient organization of the Bleachers' Association has enabled it to utilize these favourable conditions to the fullest advantage.

The tentative conclusions indicated earlier in this respect are further supported by an analysis of some of the conditions which influenced the formation of the Calico Printers' Association, Ltd., although its operations were hampered until 1902–3 by some defects of organization. Since these have been remedied, the amalgamation has been able to exercise very considerable influence upon the course of events in this branch of the cotton industry. It appears that the English calico-printing establishments have been established for a very long time, and have acquired a world-wide reputation and prestige for the excellence of their products; partly for this reason they are not only comparatively unaffected by foreign competition in the home market, but have secured control of a very extensive export trade. Apart from the exportation of calico prints, there is, of course, "a vast outlet in the home trade," which is unusually safe, and practically under the control of the home enterprises. The number of firms handling this enormous volume of regular and steady trade was

[1] Prospectus of the Bleachers' Association (Ltd.); *U.S. Industrial Commission Reports* (Appendix iv *a*), pp. 60, 58–74.

comparatively small, being about fifty to sixty previous to the formation of the amalgamation between forty-six of them. Moreover, these firms were highly concentrated as to location, fourteen being situated in the Glasgow district and the remainder in or near Manchester, and controlling about 85 per cent. of the calico-printing industry.[1] Their general interests and circumstances were, therefore, much alike in character, and as they came into touch with each other very frequently, temporary combination had been resorted to for various purposes; this, of course, prepared the way for amalgamation. Apart from these circumstances, which constituted favourable "external conditions" of combination, there were others which not only placed a check upon the dangers which might arise from potential competition becoming actual, but really constituted "bases of monopoly." Thus the secure position of the combined firms in relation to potential combination was emphasized, for example, in that "the magnitude of the operations will practically ensure to them the first offer of all new inventions and discoveries relative to the trade, and also the best productions of the designer and engraver." These are factors of the greatest importance in calico printing, which is "in itself a difficult and complicated business," in which the maximum degree of success could be attained "not so much by the skill of any one individual as by the combination of skilled workers under highly organized and experienced management."[2] This could be best secured, if not only secured, by means of the combined resources of the existing enterprises. Further, the latter possessed old-established "trade-marks" recognized all over the world, and so important in distribution that new firms would find it difficult to secure any considerable market standing. Merchants would be unwilling to entrust valuable fabrics to

[1] Prospectus of the Calico Printers' Association (Ltd.); *U.S. Industrial Commission Reports*, Vol. xvii, pp. 42, 39–48.

[2] *Ibid.*

untried firms lacking the recommendation of well-proven excellence.

These conditions may serve to indicate some of the factors which have influenced the development of the amalgamation of the calico-printing enterprises, which included most of the leading firms in the trade. Allowing for certain disadvantages connected with its original structure as a form of business organization, the defects of which were set right subsequently, there appears to be every reason for regarding it as a "trust" amalgamation.[1] The position of the calico-printing enterprises, even previous to their amalgamation, was a very strong one, since the circumstances of the industry placed them in a very favourable position in relation to foreign competition. The "economies of combination" as regards the costs of production and distribution have also helped the establishments within the amalgamation to meet all competition upon more favourable terms than was possible previous to their fusion. The inclusion of a group of "calico print merchants" in the amalgamation represents an important factor which strengthened the position of the amalgamation, since it tended to make its organization or structure more "complete." As will be seen later, the development of this amalgamation affords valuable evidence as to the influence of the "form of organization" adopted—its efficiency or its defects—in "determining" the development of a "trust" amalgamation, as of any other form of industrial combination.[2]

An analysis of the application of the various circumstances which have influenced the development of that well-known enterprise, the Fine Cotton Spinners' and Doublers' Association, Ltd., is very interesting and lends further support to the tentative conclusions indicated earlier with regard to the development of the

[1] *The Trust Movement in British Industry* (H. W. Macrosty), pp. 144–150, Appendix iv; *Monopolies, Trusts, and Kartells* (F. W. Hirst); also *infra*, pp. 331–2.

[2] *Infra*, 331–2.

"trust" amalgamations. It also indicates the great difference between the conditions governing the fine spinning and doubling branches of the cotton industry and those predominant in the other primary branches of coarse spinning and weaving.

It has been seen that whereas even simple forms of temporary combination are impracticable in the latter branches, yet the amalgamation of the enterprises engaged in fine cotton spinning and doubling has been most successful right from its establishment in May, 1898, exercising powers which entitle it to be ranked as a "trust" amalgamation.

It seems that the position arises from the fact that the circumstances of this branch of industry constitute favourable "external conditions of combination," and also "differential advantages" which have been utilized to the full by very efficient methods of business organization and management. First, this branch of the cotton industry is of vast dimensions and practically immune from the competition of foreign firms, and also "protected" against the possibility of potential competition becoming actual by the establishment of new firms within England, least of all in localities outside Lancashire, for various reasons; *e.g.* the necessity for the fine spinning and doubling processes to be carried on near the other branches of the cotton industry; the traditional skill of the Lancashire weavers, particularly those from the neighbourhood of Manchester and Bolton, which is essential for fine spinning and doubling; the suitable climate of Lancashire, the humidity of which facilitates fine spinning, since the threads hold together better and do not break so frequently. The local advantages of Lancashire in these respects are very considerable; *e.g.* "in regard to fine spinning we have a pre-eminent advantage in Lancashire —the finer the yarn, the more climate affects it. . . . For the finest counts, we have the best climate in the world. This must always be a potent factor." The

supply of labour is of the highest standard of efficiency, being trained by tradition and experience, so that employers are recompensed for the high wages paid to their operatives, relatively to the wages of similar workers in other countries. Another local advantage of considerable importance arises from the fact that there is a supply of cheap and reliable machinery and various auxiliary appliances readily available in the immediate district.[1] Again, at the inception of this amalgamation the bulk of this branch of industry was in the control of a relatively small number of firms—about thirty in all, large and much alike in size and circumstances, being situated in the closest proximity.

For largely on account of the extreme specialization which is so characteristic of the cotton industry, the finer and the very finest yarns are spun in the neighbourhood of Bolton and in or near Manchester.[2] Apart from these favourable "external conditions," other circumstances have endowed the fine spinning and doubling enterprises with various "differential advantages," which constituted "bases of monopoly" available for use by their amalgamation. Fine spinning and doubling needs the finest qualities of raw cotton. These are grown only in the Sea Islands and in certain parts of Egypt. The supply is not only very limited in proportion to the demand, but it is said that sometimes it tends to fall below it. By means of their combined resources, the Fine Cotton Spinners and Doublers' Association, Ltd., are naturally able to secure first hold over the available supply in most cases.[3] Another differential advantage tends to place a further check upon the establishment of new enterprises to carry on fine cotton spinning and doubling within the locality of the existing firms, much less in other districts. Fine yarns are produced mainly for export and for further manufacture

[1] *Tariff Commission Reports*, Vol. ii, § 198; Cp. also *Report of Cotton Trade Commission to Japan*, etc.

[2] *The Lancashire Cotton Industry* (S. J. Chapman), *passim*, Chap. viii.

[3] *Tariff Commission Reports*, Vol. ii, § 126–84, 307.

into sewing cottons and into the special classes of fine and expensive fabrics for which the Manchester district is famous. The quality of these depends largely upon the quality of the fine and doubled yarns, and this in turn can only be secured by firms that have been long established and possess a highly developed organization with trained and experienced workers. For the above reason, the merchants and firms who purchase these fine yarns will deal only with producers who have a well-established reputation for the excellence of their products.[1] Lastly, there exists a striking contrast between the firms engaged in the coarse spinning and weaving branches of the cotton industry and those engaged in fine spinning and doubling. The latter seem to have a very limited "capacity for multiplying." In fact, at some periods, judging by the number of spindles, there is a tendency to a decrease, whereas the firms engaged in coarse spinning and weaving can increase very easily and rapidly, *e. g.*—

Year	Spindles (Coarse and Medium)	Doubling Spindles
1874	37,515,772	4,366,017
1878	39,527,920	4,678,770
1885	40,120,451	4,225,470
1890	40,511,934	3,992,885
1903	43,905,232	3,952,424
1904	47,000,000	3,600,000 (estimated)[2]

It has been estimated that over a period of thirty years fine and doubling spindles have been tending towards a decrease, while coarse and medium spindles have increased by seventeen per cent. Whereas the establishments in the latter branches are few and large and much alike as to general circumstances, those engaged in coarse

[1] Cp. Prospectus of the Fine Cotton Spinners' and Doublers' Association (Ltd.).

[2] *Tariff Commission Reports*, Vol. ii, Part i, § 20–25; also cp. *The Lancashire Cotton Industry* (S. J. Chapman), *passim*.

and medium spinning and in weaving are, for the most part, very varied in size and circumstances. Some of the latter are carried on by "men with little capital, who rent the buildings and turning, and produce successfully in a small way by joint stock companies formed partially for weaving or spinning and partially to acquire and lease sheds and power." The contrast is a striking one, and serves largely to explain the different fortunes of combination in these related primary branches of the same industry respectively, particularly when taken in conjunction with the circumstances indicated earlier as regards temporary combination. They placed a check upon the chances of potential competition becoming actual through the establishment of new firms, and also gave the existing enterprises advantages, "appreciably monopolistic in character," which could be fully utilized by their amalgamation. The relations between the various establishments had prepared the way for the amalgamation of existing enterprises, sound organization and administration assured it a successful career in utilizing the favourable conditions so well set out in the prospectus of The Fine Cotton Spinners' and Doublers' Association, Ltd. For although its position is certainly "dependent on the general prosperity of the country," and that of the cotton trade in particular, the suppression of internecine competition has been a very considerable and direct advantage to the establishments engaged in fine spinning and doubling. For it has introduced a steadying element into the industry generally; although it certainly is subject to stimulating competition of different kinds, its position is full of significance as indicative of the utility and development of the "trust" amalgamations. In particular, it exemplifies the value of securing a satisfactory "form of organization," based upon sound finance and efficient centralized management, if the administration of an amalgamation, like any private firm, is to be successful. For although few of the large textile combinations have

fully met the somewhat "over-optimistic" expectations with which they were founded, "among the number the Fine Cotton Spinners' and Doublers' Association occupies a prominent position." [1]

The manufacture of sewing cotton and thread in England has been largely dominated by two great enterprises, Messrs. J. and P. Coats, Ltd., and the English Sewing Cotton Co., Ltd.; these may be fairly ranked as "trust" amalgamations, and further exemplify the application of the determinant conditions indicated in the earlier conclusions, particularly in the case of Messrs. J. and P. Coats, Ltd. This gigantic enterprise really represents the result of an amalgamation effected in 1896 between Messrs J. and P. Coats, Ltd., Clarke & Co. of Paisley, James Chadwick & Co. of Bolton, Jonas Brooke & Co. of Meltham. These enterprises were established early in the nineteenth century, and by dint of steady application and enterprise had acquired a world-wide reputation for the excellence of their products. Moreover, for some time previous to their combination these enterprises had also been in touch with each other through the Central Thread Agency, which undertook the distribution of their products. It is said that they were the dominant firms in their branch of industry, very favourably situated as regards competition at home or abroad, and that their mutual competition was injurious to them all. Although the relative strength and resources of such rivals would intensify the effects of their internecine competition, the very fact of their strength and position in the trade would tend to facilitate effective combination between them. The unit resulting from the amalgamation of four such firms would naturally possess such resources and differential advantages as to command a very favourable position with regard to existing or potential combination.[2] Apart from Messrs. J. and P. Coats, it is said that there were

[1] *The Trust Movement in British Industry* (H. W. Macrosty), p. 137.
[2] *Ibid.*, pp. 125–136.

about twenty thread-making firms in the United Kingdom, which had been brought into touch with each other on several occasions by means of a form of temporary combination. In 1897 an amalgamation—the English Sewing Cotton Company—was formed between fourteen of these firms, other large firms being included later.[1] It seems clear that the strength of such large establishments would place a considerable check upon the possibility of potential competition becoming actual, while the trade-marks, reputation, and resources of the English firms would place them in a favourable position with regard to foreign competition. The fact that a form of mutual investment, or "investment alliance" existed between Messrs. J. and P. Coats, Ltd., the English Sewing Cotton Co., Ltd., and the American Thread Co., the three predominant enterprises within this industry, must have exercised very considerable influence upon the position of the English enterprises in relation to foreign competition.

Another good illustration of the application of the various "determinant conditions" is afforded by the Wallpaper Manufacturers, Ltd. Inquiries show that this company may well be ranked as a "trust" amalgamation, and also indicates that the circumstances which have determined its development are similar to those pointed out already. It has been seen how various conditions of an unfavourable character have made even temporary combination impracticable as between the manufacturers of coarser qualities of paper; yet, curiously enough, the circumstances of the firms making wallpapers, etc., are such that they have facilitated the successful development of an amalgamation between the firms. First of all, the conditions of this branch of the trade were highly favourable. The English firms were excellently situated with regard to foreign competition; *e. g.* "The United Kingdom occupies the leading posi-

[1] Cp. *The Trust Movement in British Industry* (H. W. Macrosty), pp. 129–30.

tion in the world in the wallpaper industry, and practically holds the whole of the home and colonial trade. For many years, notwithstanding protective duties, a large export trade has been done with the Continent in the cheaper qualities of goods, and the vogue for English decorative art styles and colourings has recently increased the trade in the finer qualities with the United States and the Continent." [1] Statistics show that our exports of paper hangings have been on the increase as to quantity, and especially as to value, while the importation is not an important factor in the trade. Again, this large and flourishing trade was in the hands of a relatively small number of firms. In 1900 they numbered about thirty-five, all large and well established, and somewhat concentrated as to location, the majority being situated in or near Manchester and London, whilst almost all the remaining firms had branches in London, Manchester, and Glasgow. The existing enterprises were brought into contact with each other on frequent occasions, and this fact tended to prepare the way for permanent union.[2]

The prospectus of this amalgamation indicates circumstances which not only facilitated combination but also furnished a "basis of monopoly" tending to hamper the development of new firms. "The variety of patterns, colourings, and styles produced at the various branches, where individuality will be specially encouraged, renders it almost hopeless for any one to compete with the company and endeavour to satisfy the requirements of merchants and decorators and the public taste." [3] The skill of expert managers, designers, and engravers, the excellence of patented designs, colourings, styles, special processes and machinery held by the combined firms, all such important factors of production in this industry, could not be easily reproduced by new firms without great expense. The manufacture of wall-

[1] Prospectus of the Wallpaper Manufacturers (Ltd.).
[2] *Ibid.*, p. 4. [3] *Ibid.*

paper and decorative products is very technical, and the resources of an amalgamation of well-established firms assure a command over existing facilities and also the first offer of improvements. A few firms were established to compete with the amalgamation and stood as "non-combine firms," but they were said to occupy a small position by the side of the amalgamated firms. In fact, the position of this amalgamation entitles it to be ranked within the class of "trust" amalgamations. Agreements were entered into between the amalgamation and the merchants or dealers who traded with it, by which the latter agreed to purchase their supplies from the amalgamation in return for special trade conditions. This greatly facilitated the work of distributing its products and helped to consolidate its position generally. Moreover, the amalgamated firms possessed a privileged supply of important raw materials, *e.g.* paper, through a direct ownership and control of two paper-making mills. Establishments for the manufacture of enamelled and chromolithographic paper, anaglypta, cordelova and lignomur were also included among its properties.[1]

The above circumstances naturally created valuable "differential advantages" as regards both existing and potential competition, whatever the direction from which they might come, and also furnished favourable conditions which tended strongly to facilitate the development of the amalgamation. For as regards the industry generally it was stated that "there is probably no industry where the advantages of amalgamation are so great as in the manufacture of wallpapers;" *e.g.* by the increase of profits from economies and reductions in the costs of production; freedom from price-cutting, irregularity of terms of trading, long credits, unnecessary expenditure for securing orders; by the adoption in all of special processes of manufacture possessed by any

[1] Prospectus of the Wallpaper Manufacturers (Ltd.), pp. 3, 5–7.

establishment, and by the utilization of expert ability to the advantage of the industry generally. It is significant to note that the efficiency of the "form of organization" adopted by the amalgamation as regards administration and management generally contributed considerably towards consolidating its position.

The manufacture of chemicals seems to have proved a favourable sphere for the development of large amalgamations, on account of a variety of conditions which are operative in this branch of industry. Thus it is probable that few industries have developed so rapidly during the last twenty years as the chemical industry, owing to the application of new methods and processes within it. This rapid development has rendered it peculiarly liable to internal changes of a revolutionary character, and the consequent instability has been intensified by the fickle and sensitive nature of the market for chemical products. The alertness of competitors, especially German firms, has compelled English firms to keep their appliances right up to date. Thus large capital is necessary in order to equip and maintain establishments at the highest degree of efficiency, and also to distribute over as large an area as possible the risks and losses arising from the rapidity with which plant depreciates and becomes "out of date." Further, the utilization of bye-products is now a very considerable source of revenue; these savings and various other economies of large-scale production and distribution can be secured to the fullest degree only by large firms.

Such circumstances as these have given a special impulse towards the development or perhaps the survival of large firms, often by means of amalgamations, quite apart from the stimulus arising from a desire to avoid the effects of internecine competition, which are very considerable in this branch of industry if only on account of the vast amounts of fixed capital involved. As early as 1890 these fundamental causes seem to have contributed to the scheme for the formation of the

"Alkali Trust." [1] The development of the large and very successful firm of Messrs. Brunner, Mond & Co. exemplifies the application of the conditions indicated above. It is largely the result of the absorption or amalgamation of a number of firms into one dominant resultant unit, and occupies a remarkably strong position on account of the various "differential advantages" which it possesses: *e.g.* its control over the supplies of raw materials, its patent processes, command of exceptional technical skill and business organization, and world-wide reputation for the excellence of its products. The normal trend of conditions in the chemical industries of itself tends to place a natural check upon the possibilities of potential competition, owing to the initial difficulties to be encountered, and the risks on fixed investments which must be covered right at the very outset.

The "trust" amalgamations which have been referred to above are only taken as typical instances, which have been studied in order to indicate the application and operation in actual practice of some of the circumstances which "determine" their development within certain spheres of British industry. They do not form an exhaustive list, various others are available for analysis, *e.g.* the Imperial Tobacco Co., Ltd., the United Distillers' Co., Ltd., and the Nobel "Explosives Trust," etc. However, they appear sufficient to illustrate and support the general principles and conclusions indicated earlier as to the operation of the "external conditions of combination," and also of the "differential advantages" in production and distribution, in their relation to the development of the "trust" in British industries.

Although in no case does it appear that a "trust" amalgamation derives its powers solely or mainly from the "economies of combined production and distribu-

[1] *The Trust Movement in British Industry* (H. W. Macrosty), pp. 187–194.

tion," it can be readily admitted that the "economies of amalgamation" must assist a trust very considerably in carrying out its price policy, in withstanding or undercutting outside competitors. The prospectuses of the various amalgamations lay great stress upon "the prospective economies of the amalgamation through the prevention of overlapping, the centralization of buying and finance, and the concentration of production;" or from the "economies due to the centralization of office work, buying, distribution and financial arrangements." [1]

In almost every "trust" amalgamation considerable economies have been secured as the direct result of combination. Thus it has been said that the savings effected by the Bradford Dyers' Association, Ltd., through the joint purchase of the expensive dyeing materials and of raw materials generally were very considerable. So also in the case of the Fine Cotton Spinners' and Doublers' Association, Ltd. It seems probable that amalgamations like the Calico Printers' Association, Ltd., and the Wallpaper Manufacturers, Ltd., have many opportunities of realizing economies, since the heavy costs of purchasing designs, patterns, and machinery are spread over a larger area; moreover, the expert skill and special processes formerly held by individual firms can now be utilized by all the combined firms to the common profit. Similarly, it has been reported that the above firms and the Associated Portland Cement Manufacturers, Ltd., secured considerable savings from the centralization of production and distribution. Admitting that there is a tendency to over-estimate the "economies of amalgamation," it nevertheless seems clear that the latter serve as a very valuable means of supporting the policy of any amalgamation of enterprises, although they may not be considered essential "determinant" circumstances influenc-

[1] *U.S. Industrial Commission Reports*, Vol. xviii, Part i, Appendices.

ing its development. There is also the importance of the mere amalgamation of capitals in this connection, since it is a means of increasing the resources, productive efficiency, and competing strength of a permanent combination of firms. It also renders it more difficult for new firms to be established with any prospect of success unless large quantities of capital are available. This factor, therefore, tends to operate as a check upon both existing and potential competition.

In a general survey of the position of industrial combination, it appears that the textile industries have proved the most favourable sphere for the development of "trust" amalgamations in the United Kingdom. This has been largely due to the favourable conditions operative within various branches of these industries. However, what has been termed the "imitative tendency" also seems to have exercised some degree of operative influence.

In the United States, after the early successes of various "trusts," their promotion seems to have become a positive mania. The movement towards the formation of industrial combinations in England received considerable impetus from the success of American trusts; and, above all, the success of the early "trust" amalgamations of Messrs. J. & P. Coats, Ltd., and the Fine Cotton Spinners' and Doublers' Association, Ltd., made amalgamation popular in the textile industries. People had heard of the successful Fine Cotton Spinners', and thought it was the day of trusts.[1] Those at the head of enterprises in various industries turned their attention towards the possibilities of amalgamation. It appears that from about 1896–1900 as many as sixteen amalgamations were formed in the textile trade; many of these might be termed "appreciably monopolistic," and thirteen of them were formed between 1898 and 1900.[2]

[1] J. and P. Coats (Ltd.) *v.* The Yorkshire Woolcombers (Ltd.), *The Trust Movement*, p. 174.

[2] *U.S. Industrial Commission Reports*, Vol. xviii, Part i, Chap. ii, pp. 14, 15, 34–5.

Other industries were similarly affected, *e. g.* from 1896–1900 over thirty amalgamations were carried out, quite twenty of them from 1899–1900. Since this "boom period" of trust development the force of the tendency towards amalgamation has been less intense, particularly as regards those which are horizontal in character. However, the tendency towards the vertical amalgamations in the iron and steel industries appears to be well maintained. Just as the success of the earlier amalgamations gave an impulse towards their formation generally, so also the temporary failure of others through defective organization, or over-capitalization, or unfavourable conditions gave a decided check to the formation of horizontal amalgamations, especially in the textile industries. The pronounced individualistic traditions of these industries reasserted themselves and checked the progress of the trust movement.

Coming to some of the other "external" conditions of combination, it appears that although the lack of facilities for promotion has tended somewhat to retard the progress of the movement towards amalgamation, it must not be concluded that "professional promotion" has exercised no influence in England. It was said that until about 1898 "the combinations have apparently been brought about chiefly through the exigencies of trade, with the initiative taken chiefly by men who are engaged in the trade itself."[1] Since that period, especially in connection with "the large crop of consolidations" between 1898 and 1900, "we have seen a process of organization quite like that which has been followed in the United States."

The promoters—and the chief promoters and the most successful ones seem to have been chartered accountants (*i. e.* parties outside the industry)—"entirely familiar with various lines of business and with business methods, have themselves taken the initiative in going to business men engaged in industries where competi-

[1] *U.S. Industrial Commission Reports*, Vol. xviii, Part i, Chap. ii, pp. 23–30.

tion was exceedingly severe, and in showing them the advantages that could come from union, and persuading them to enter into such a combination." [1] Thus from about 1898–1900 increased facilities for promotion became available, and this may have contributed considerably to the boom in the formation of amalgamations from about 1898–1900. Thus it has been said that the cement industry seemed well fitted for consolidation, but proposals for combination met with little success until 1900, when the negotiations were taken up by an outside group of promoters, and the amalgamation of cement-producing firms was carried through. In the case of the United Indigo and Chemical Co. (1899), it is said that some vendor firms were not known to each other until the promoters disclosed their identity.[2] Although the "promoters" have not proceeded on the same lines in England as they have in the United States, it seems that "outside" promotion has exercised considerable influence upon the progress of the formation of amalgamations. The requirements of English company law, the stricter business and political morality, and the methods of stock-holding in England have prevented the promotion facilities from becoming abused, as was the case in the United States. In England, the "promoter" has served the useful purpose of bridging the gap between rival firms, by acting as a skilled intermediary for negotiating the amalgamations between parties who naturally tend to stand apart, if only on account of their rivalries.

Speaking generally, it is probable that the formation of "trust" amalgamations in various spheres of British industry has been facilitated considerably through the "promotion" facilities that have been provided by "outside" parties. This is to be seen in the case of the amalgamations in the textile industries in particular. Thus the firm of Messrs. Jones, Crewdson & Youatt,

[1] *U.S. Industrial Commission Reports*, Vol. xviii, Part i, pp. 23–30.
[2] *The Trust Movement in British Industry* (H. W. Macrosty), p. 199.

chartered accountants of Manchester, who possessed "a special knowledge of industrial amalgamations," played an important part in the formation of several amalgamations; *e. g.* the English Sewing Cotton Co., Ltd. (1897), the Bradford Dyers' Association, Ltd. (December 1898), the Calico Printers' Association, Ltd. (December 1899), the Bleachers' Association, Ltd. (July 1900), and the attempted combination of Belfast flax-spinning firms (1898).[1] Similarly, the formation of the Fine Cotton Spinners' and Doublers' Association, Ltd. (May 1898), the British Cotton and Wool Dyers' Association, Ltd. (April 1900), the Yorkshire Woolcombers, Ltd. (August 1899), and the projected combination of Bradford worsted-spinning firms, all owed a great deal to the efforts of a firm of chartered accountants.[1] The formation of the Wallpaper Manufacturers, Ltd., and that of the Associated Portland Cement Manufacturers, Ltd., and various other amalgamations were also greatly facilitated by the efforts of "outside promoters."[1] However, it is interesting to notice that in the case of the important amalgamations that have been formed since the boom period, mainly in the iron and steel industries, the initiative has been taken and the negotiations carried through more by the firms directly interested.

It is possible that a "differential advantage" which may sometimes constitute a "basis of monopoly" for a "trust" amalgamation can arise from what has been termed "a monopoly of rare business ability."[2] It is probably true that industry has tended to develop more on its mechanical side than on the side of administration, organization, and management. Thus special importance might be placed upon the supply of business ability or technical skill available for existing or "potential" enterprises in particular spheres of industry. Thus, in cases where an amalgamation of firms is favourably

[1] *Vide* Prospectuses of these various amalgamations respectively.
[2] *American Economic Association Essays* (Adams), 1904, p. 104.

situated in this respect, its development is no doubt considerably facilitated.

However, the influence of this factor must not be over-estimated; for the essential function of business ability in this connection is to utilize to the fullest advantage the various conditions, already existing and operative within an industry, which are likely to facilitate the development of a "trust" amalgamation, or, in fact, of any form of industrial combination. Such conditions usually arise "normally" or naturally; and, strictly speaking, special business ability can rarely "create" such advantageous circumstances, although it is, of course, essential for utilizing them to advantage where they exist already. The influence of the personal factor in business administration, particularly as it is affected by the operation of the joint stock system, seems to be of more real importance as a "determinant condition" in the development of the "trust" amalgamation. The more particular application of this influence in the cotton industry has already been indicated;[1] however, it also seems to have a more general application to other industries in their relation to the combination tendency.

The type of joint stock company in which the manager's position has become more subordinate to that of some leading directors, controlling the higher functions of the business, has certainly been coming forward prominently of recent years over a wide range of industries. The business of laying down a broad policy on various matters, and of deciding important questions of general principles has, indeed, been tending to become specialized, as is also the case with other classes of business functions. In this "differentiation of the particular business function, brought about almost entirely by joint stock organization, is one of the chief causes of the appearance and successes of trusts and

[1] *The Lancashire Cotton Industry* (S. J. Chapman), Chapter on "Organization."

similar combinations at the present day. The business politician . . . liberated from former responsibilities, has been able to extend the sphere of his operations." [1] In fact, it appears that an extended area of control has tended to become more and more essential for complete success in many industries as regards production, distribution, and administration generally.

Of course, it is tacitly assumed that the desire of combining firms to eliminate mutual rivalries and to regulate competition as far as possible has exercised considerable influence in furthering the development of the "trust" amalgamation. The Report of the U.S. Industrial Commission is conclusive upon this point. "Beyond question the influence that has been most prominent in bringing about the later combinations among capitalists (in England), particularly in manufacturing industries, has been the desire to escape the results of competition, which is considered by the manufacturers as unreasonable and destructive. Representatives of several of the leading combinations in various lines of industry at once spoke of this as the prime cause in bringing about the consolidation. They called attention to the fact that, particularly in lines of industry where much capital was invested, competition was likely to become unreasonably severe, and to be carried out to the extent of ruin for some manufacturers, and of very low profits, if not the entire loss of profits, for all the others. . . . Members of the combinations . . . say that competition was unjustly severe, ruinous, and they have organized their combination to prevent this cut-throat competition." [2]

The view of Mr. Bolen furnishes another significant comment, that the purpose for which most of the trusts have been organized is some degree of monopoly, and the advantage of being able to control prices can easily

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[1] Vide *The Lancashire Cotton Industry* (S. J. Chapman), pp. 173–4, 148–171.

[2] *U.S. Industrial Commission Reports*, Vol. xviii, pp. 15–16.

be imagined by a business man.[1] The emphasis placed upon "the percentage of trade which the amalgamated firms control," and the "consequent possibilities as regards prices and profits," is also a very noticeable feature.

Moreover, the "trust" amalgamations may adopt various "forms of organization," regarding them in their legal or "corporate" aspects; thus they may be organized as holding companies, complete fusions to establish a new company, or somewhat along the lines of the original "trust." It has been stated that "the custom of organizing a single parent corporation to buy up and hold the stocks of various subordinate corporations does not seem to be the plan followed to any noteworthy extent in England, although it is at times true that various subordinate companies are formed to take charge of special parts of the work, and at times the work of the different establishments is to a certain extent kept independent, probably more so than is ordinarily the case with the American combinations."[2] The characteristic form of organization adopted in the English amalgamations seems to be that which involves the complete purchase or fusion of resources and plant of the combining or vendor firms in order to set up a new resultant company, which is one organization through and through.

As regards the financial basis or capitalization, so important a factor "determining" the development of an effective amalgamation, the English practice has been far more satisfactory than that followed in the United States. In the latter country the promoter may fix the valuation as to what he thinks fair and what he could persuade the vendor parties to accept. "In England there seems more generally to have been a definite rule followed." Sometimes the vendor firms sold out on the basis of a valuation fixed by disinterested and

[1] *Trusts and the Tariff* (Bolen), p. 3 and *passim*.
[2] *U.S. Industrial Commission Reports*, Vol. xviii, pp. 18–19.

qualified appraisers; in other cases the vendors' property is purchased on a profit basis—the profits of a preceding term of years as actually shown by the books of a company, and confirmed by certified accountants. The strict requirements of English law, *e. g.* as to the filing of contracts for the purchase of property of a consolidation, as to the accuracy of statements made in the prospectuses, have also tended further to make the English amalgamations more satisfactory as regards capitalization.[1]

It appears that the exact form of organization adopted in an amalgamation of enterprises in England, as in any other country, must be largely influenced by technical or legal considerations, current business methods, the character of existing legislation or lack of legislation,[2] the intentions of the organizers, and the varying circumstances of particular cases. As regards the successful operation of a "trust" amalgamation, its exact legal or "corporate" character appears to be of less importance than the efficiency of its internal organization in the matters of business administration, capitalization, and control of production and distribution. For it seems clear that however favourable the circumstances of an industry may be for the development of a "trust," the extent to which these can be successfully and fully utilized depends, in a very large measure, upon the efficiency of the internal organization of the amalgamation of enterprises within the industry. This principle has been found to apply to every form or development within the combination tendency. The inherent defects of the internal organization of temporary combinations have been some of the main causes for their ineffectiveness. For it has been seen that even when the conditions of an industry were favourable to schemes of combination, the weaknesses of temporary combinations either made them unable fully to utilize such conditions, or tended to their ultimate disruption and dissolution.

[1] *U.S. Industrial Commercial Reports*, Vol. xviii, pp. 23–24; also 24–30.

[2] *Ibid.*, Summary and Introduction, p. 8.

Similarly, it has been seen that the nature of the internal organization of the "hybrid" associations makes it impossible for the central management to secure the advantages of centralized or combined production, although the joint control over distributive processes may be very complete indeed; yet even in these respects the "hybrid" combination has not proved a wholly satisfactory form of combination as regards effective organization. The amalgamation, no matter how wide its scope or how favourable the conditions of the industry wherein it is developed, is by no means exempt from the operation of the above principle. This is naturally and necessarily so, since this principle represents an essential condition influencing business and industrial organizations of every character, and operative in every sphere of industry. An amalgamation of enterprises is none the less a form of business and industrial organization; and it cannot well be successful and effective any more than an independent firm when its internal organization is defective. The mere fact of amalgamation or of industrial combination generally does not of itself bring successful and effective operation.

The above appears to indicate a cause which has been underlying the various schemes of reorganization and reconstruction which have been carried out in several of the English amalgamations. The general movement has been so important that it has come to be regarded as a subsidiary line of development within the combination movement in England, answering to "the striking and still further tendency towards making existing combinations much more complete in the control which the central management holds over the different members. . . ."[1] But although the U.S. Industrial Commission refers to its operation mainly in connection with "the large crop of new consolidations" which sprang up, especially in the manufacturing districts of the North of England,[1]

[1] *The U.S. Industrial Commission Reports*, Vol. xviii, Part i, Chap. ii, p. 14.

it appears that this same principle has been none the less operative within every form and development within the combination movement generally. As a matter of fact, this tendency towards the centralization of management may be considered part of a broader movement which is exhibited throughout every sphere of industrial and commercial life in modern times. Modern conditions both necessitate and facilitate concentration in business organization. Management must be largely centralized, provision must be made for an executive or administrative body that is able to act promptly, finally, and decisively at a moment's notice. "Changes taking place in one corner of the globe are felt almost immediately in every other part." Industry and commerce have become cosmopolitan, and developed into a highly sensitive organization that may be well-nigh wrecked at times unless its operations are regulated with promptitude and precision. The improvements in communication and transport, the "elimination of space," the intensity and increasing complexity of industrial and commercial organization, partly occasion and partly intensify this movement towards the centralization of control.

"Industrial combination" is by no means an independent and distinct species of business organization unaffected by modern conditions of industry and commerce. On the contrary, every form and development of the combination tendency responds to the inevitable influence of these conditions. As has been seen, this centralizing tendency is exhibited within the terminable or temporary forms of industrial combination in the endeavours made to overcome the inherent defects which are inevitably present in temporary combinations. It appears in the tendency to establish some permanent headquarters, to appoint regular periodic times for meetings, to delegate various functions to a standing committee or permanent executive composed of a few representative members. An official secretary is some-

times appointed who, aided by one or two executive members, seeks to carry out the decisions of the central committee, which are nominally binding upon all the members. Similarly, it appears that the development of the "hybrid" associations presents another aspect of this tendency. It seeks to increase the control which the central management of a combination that is mainly "temporary" in character exercises over its members, by introducing a permanent element into its organization which shall exercise full and centralized control over all distributive functions. The associated members delegate control of these functions to the central management, which can exercise them with undivided authority. This represents an endeavour to conform to the conditions which determine the effectiveness of an industrial or commercial organization, and also to meet the difficulties arising from the defective organization of purely temporary combinations.

The influence of this "still further tendency towards centralization" also appears clearly in connection with the "trust" amalgamations, for various reasons: *e.g.* the necessity for increased centralization of management has been all the more pressing because some of the amalgamations were defective in this respect, right from the time of their formation. The capital involved and the large interests at stake increased the pressure of this necessity, and in practical effect its influence can be seen in formal schemes of reorganization. Thus the English Sewing Cotton Co. was "reconstructed" in 1902. At the time of its inception (1897), provisions were made by which the original businesses retained certain rights as to management. However, it was found by about 1900–1 that the powers of the various branch managers were too great to allow the central management effectively to control the resources of the amalgamation. Thus the whole organization was remodelled, the powers of departmental managers limited, the directorate reduced, and the central management

was given full and immediate authority over every portion of the enterprise. Similarly with the Associated Portland Cement Manufacturers, Ltd., when it was found necessary to make the internal organization more "intense" by decreasing the powers of branch managers and increasing those of the central directorate. It was decided to constitute an executive of managing directors who should have full power in order more effectively to utilize the advantages of the amalgamation, and thereby to secure its position. So also the Bleachers' Association, Ltd., was reconstructed under new articles in order to bring about this centralization of management. The extensive powers originally given to branch managers have been restricted, and fuller powers are entrusted to a smaller body of directors. The "classic instance" is the Calico Printers' Association, Ltd. At the time of its inception in December, 1899, the number of directors actually reached the surprising figure of eighty, all directly responsible to the shareholders for the general working of the amalgamation. Besides these there was a large board of managing directors and a host of branch managers (128), with considerable though undefined powers. Naturally, no form of enterprise, not even an amalgamation, could stand such a strain, the favourable prospects could not be realized, and the whole position was untenable and impracticable.[1] Thus in September, 1902, the whole organization was reconstructed so as to centralize the management according to the report of an Investigation Committee which comprised some of the most able men in the textile industries. This report excellently exemplifies the necessity for sound organization and for centralization of management within an amalgamation.[2] The manner in which their recommendations were carried out furnishes a

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[1] *Monopolies, Kartells, and Trusts* (F. W. Hirst), p. 167–8.

[2] Vide *The Trust Movement in British Industry* (Macrosty), Appendix iv; "Report of the Investigation Committee of the Calico Printers' Association (Ltd.)."

standing indication of the necessity for, and also the application in actual practice of what the U.S. Industrial Commission has termed the still further tendency towards increasing the control which the central management of a combination holds over the constituent establishments.

Several circumstances have contributed to make this process of reorganization all the more necessary in several English amalgamations. The traditional conservatism of English industry and business methods, the influence of long-established principles of individualism, have not been easily overcome even within amalgamations.

There are certain disadvantages which are inseparable from the fundamental changes which accompany the transfer of individual business from independent to combined management under the procedure usually adopted in England. The vendor firms may insist upon certain provisions as to the retention of the administrative staff, managers, etc., by the resulting amalgamation.[1] Moreover, it appears that one of the noteworthy features of the English amalgamations is "the great extent to which the vendors retain their hold over the combined business."[2] Thus, when the administrative staff of the combining firms is retained in the resulting amalgamations to an unnecessary degree, the organization of the latter tends to become unwieldy. Owing to the difference in the methods by which they were promoted, the American fusions differed from those in England in the above respect. In U.S.A. a promoter standing outside the vendors was ready to buy them all out in cash, if need be. Thus the organization of the fusion, the constituent establishments, and its administration could be determined at will right from the very inception of the project. On the contrary, it is

[1] Cp. *The Economic Journal*, September 1902, pp. 347-66; *Business Aspects of British Trusts* (H. W. Macrosty).
[2] *Ibid.*, pp. 354-6.

said that in some of the English fusions the defects arising from unwieldy directorates, complex administration, and the retention of the vendors' organization necessitated their subsequent reorganization. The exhaustive and extremely valuable report of the committee of experts which investigated the position of the Calico Printers' Association, Ltd., indicates various other circumstances which also tended in this same direction: *e. g.* the opinion (not shared by the committee) that the "individuality" [1] of leading men, their taste, and creative faculty could not with advantage be placed under centralized control, and that "perfect freedom of action and absence of control are necessary to their well-being and indispensable elements of success," [2] tended to create many of the difficulties which necessitated reorganization. In the case of the Calico Printers' Association, Ltd., once the incongruous organization was swept away, and a small directorate comprising a few executive members was entrusted with full control, the fortunes of the amalgamation revived; there opened up "a successful career for this great combination," once the form of organization adopted was such as could fully and effectively utilize the favourable conditions within the industry. The Report of this committee of experts should be studied as an essential preliminary to any correct understanding of the position of the "trust" amalgamations in English industry, particularly in so far as the question of their internal "organization" is concerned. For it appears that such an organization, if drawn up on lines which are likely to be successful, (*a*) must provide for securing all the legitimate advantages which can be derived from the combination of a large number of manufacturers; (*b*) it must counteract disadvantages which inevitably accompany the transference of individual enterprises to a newly-constituted amalgamation; (*c*) it must provide for the

[1] "Report to the Shareholders of the Calico Printers' Association (Ltd.), September 9, 1902. [2] *Ibid.*, Part ii, §§ 19 and 20.

establishment of settled relations between the various sections and individuals within the amalgamation, by making arrangements which shall be flexible and capable of expansion without their permanence being endangered; and also (*d*) it must ensure that the financial position of the amalgamation is sound, especially as regards capitalization.[1]

It seems clear from the history of English amalgamations that the form of organization adopted constitutes a condition which exercises a tremendous influence in determining (*ceteris paribus*) the effectiveness of a "trust" amalgamation, or, in fact, that of any form or development of industrial combination. The fact that a number of rival firms combine together is not sufficient, of itself, to end the evils of the competitive system, and turn loss into profit without any more ado. Just as in the case of the smallest private firm, the sound and effective organization of business functions and finance is an all-important condition of industrial efficiency in the largest amalgamation of independent enterprises. What has been termed the still further tendency towards centralization of control or management within existing combinations seems to be, at bottom, largely a tendency towards the perfecting of business organization in order to meet the requirements of modern industry and commerce. It is part of a wider tendency which is operative in every sphere of business organization; and, naturally, industrial combinations are no more exempt from its operation than any other form of business organization resorted to in order to meet the modern conditions of industry and commerce.

It now seems possible to review the whole position of the combination tendency in England, after taking a short survey of the foregoing inquiry. It appears that several of the forms or developments exhibited within the general tendency towards industrial combina-

[1] Cp. *The Trust Movement in British Industry* (H. W. Macrosty) Appendix, iv, pp. 375–85.

tion can be linked up under the one broad development indicated earlier—the tendency towards combination "appreciably monopolistic in character."

This general development within the combination tendency has already been anticipated in the broad classification of the "forms" of combination according to the standards of classification adopted at the outset of the inquiry. Thus it has been seen that several temporary associations have been able, under special circumstances, to control prices for considerable periods together: *e. g.* the Midland Marked Bar Association; the Scotch Steel-makers' Association; the Boiler Plate and Ship Plate Associations; the National Galvanized Sheet Association; the Fifeshire Coalowners' Association.

On account of the presence of conditions which are especially favourable to combination, such associations have been able not only to eliminate mutual competition between the firms combining, but even to regulate prices in their respective trades with a control "appreciably monopolistic in character" during various periods. But such control has lacked continuity and breadth; it is essentially spasmodic and irregular rather than continuous and steadied.

Similarly, it appears that the control of various "hybrid" combinations over distribution has certainly been "appreciably monopolistic" in several cases. Moreover, as has been shown, this control has sometimes been exhibited with a remarkable degree of continuity, as when the "Sales Agencies" have enabled the combined firms to exercise "a dominance approaching monopoly" in their particular industries for long periods together: *e. g.* the Industrial Spirit Supply Co., Ltd.; the Central Thread Agency; the North-Western Salt Co.; the Cable-makers' Association; the Steel Rail Syndicate, etc. In the case of the "Shipping Conferences," the Report of the Royal Commission which investigated the question of their operation virtually recognized that the "Conferences" were able

to eliminate competition and control rates continuously, although such control may often be necessary for the well-being of the various shipping lines concerned. Through its monopoly of silver coinage the West African Conference was considered to hold a practical monopoly.[1] The power of these effective temporary and "hybrid" combinations is clearly due to the presence and operation of a number of special conditions highly favourable to combination. Yet it was seen that the control even of these "hybrid" associations was incomplete and faulty as regards production, and not always satisfactory even as regards distribution. In fact, it is best that the control over both of these branches should be combined under the same authority. The amalgamation appears to be the only form of industrial combination falling within the broad category indicated earlier, which can ensure full and continuous control over both production and distribution. When sound organization, management, and finance coincide with favourable "external conditions" and "differential advantages," the powers of an amalgamation may become "appreciably monopolistic in character" in the particular industries within which the combining enterprises are engaged.

Thus it seems possible to indicate a general movement towards the development of monopolistic combination which is exhibited under varying forms and in varying degrees. The application of this principle may be carried still further, though as regards the final or ultimate development of the combination movement in this respect varying opinions are held. Yet there does seem more general agreement that the movement towards industrial combination, or even towards the "concentration" of production and distribution, contains within it, inherently, so to speak, a tendency towards monopoly or monopolistic combination. For there are many circumstances which point in this direc-

[1] *Lloyd's List and Shipping Gazette*, June 1910.

tion. Monopoly and monopolistic combination constitute throughout a question of degree, which varies according to the nature of attendant circumstances. The ultimate aim of combination is probably the regulation of output and prices at will, as well as the elimination of internecine competition. "The advantages of being able to control prices . . . can well be imagined by business men." This represents the highest standard and the final criterion according to which the "effectiveness" of industrial combinations may be determined or estimated.

The circumstances which contribute to determine the "effectiveness" of various combinations—the difficulties attending their formation, the possibilities of their development, operation, and stability, are very much alike in kind, whatever the particular form or development exhibited. These comprise the favourable "external conditions," special circumstances, and "differential advantages" operative within the industries wherein the combinations are formed. But the "degree of effectiveness" is really the same thing as the degree of monopolistic combination—the ultimate object of most combinations of enterprises. The combination that is fully "effective" is certainly one whose control is "appreciably monopolistic in character," which "exercises a dominance approaching monopoly" in its branch of industry. Thus, will not the circumstances which "determine" the development of "effective" industrial combinations, as considered above, also "determine" the development of "the inevitable tendency towards monopoly" which is said to be the dangerous tendency inherent within the general movement towards industrial combination?

Above all, will this not indicate a means of determining the future or ultimate development of the combination movement in England, as also in other countries—its possibilities, be they limited or unlimited, the survival or the final elimination of competition?

This, too, is a matter upon which varying opinions

are held. Some write with confidence of the inevitable persistence of competition; others, with equal confidence but considerable apprehension, regard the triumph of combination as assured, and the final doom and disappearance of competition as fast approaching and inevitable. Time alone is said to be required for the development of complete monopolistic combinations in every branch of industry—the forerunners preparing the way for municipalization, nationalization, and what not!

However, prophecy is always a dangerous procedure unless inspired or oracular. In the sphere of Economics, in particular, predictions are very liable to be falsified by the emergence of new facts. This has well been exemplified in the theories of the past. The frequent disagreement which has existed between writers in their forecasts as to the future of the tendency towards industrial combination only adds to the difficulty. Yet is prophecy necessary in order to estimate the future development of the combination tendency in British industry, in particular, where the problem is not complicated by the existence of artificial conditions like those which have been operative in U.S.A.—tariffs, discriminating railway rates, etc. It seems clear that in England the tendency towards industrial combination is essentially a "natural" or almost "normal" development, largely determined by the "normal" conditions of the various English industries concerned. Thus, in the case of the United States, an alteration of the "artificial" conditions would profoundly influence the position of industrial combination within that country. Similarly, in the case of Germany, the abandonment of the tariff system, or alteration in the attitude of legislation towards the Kartells, would greatly affect the position of the combination movement as represented by them. The position of the movement in these countries, particularly in the United States, is therefore intimately involved with that of various "artificial"

conditions, a change in which might greatly affect the position and future development of the movement within them.

However, in the case of England the movement towards industrial combination has proceeded almost independently of the influence of any "artificial" conditions. Its development has been influenced and determined by the "normal" conditions of the various English industries; therefore the remaining task of surveying the ground already covered, with a view to deducing therefrom some conclusions as to future developments, is facilitated very considerably.

Chapter VII

SOME GENERAL CONCLUSIONS

In the foregoing chapters an attempt has been made to unravel the tangled skein represented by the general tendency towards industrial combination in English industry, with a view to indicating some of the most noteworthy features exhibited within it. It now remains to sum up the general position so as to estimate its bearing upon future developments. On account of the intricate nature of the subject, it is clear that more than a general indication cannot well be attempted.

In a broad estimate of the position of the tendency towards industrial combination, it appears that it represents essentially the natural or almost normal development of a new form of business organization to meet the modern conditions of industry and commerce. Herein lies a considerable contrast with the development of the combination movement in the United States, and to a less degree in Germany also. Not that the movement in these countries cannot be termed a natural or normal development; for industrial combinations, wherever they have arisen, are, at bottom, largely representative of the natural development of a form of industrial or commercial organization in order to meet modern conditions. The point of contrast lies rather in the fact that the nature and progress of the movement in England have not been modified and complicated by the operation of a variety of "artificial" circumstances, as has been the case, for example, in the United States and in Germany. Thus it is found that as the operation of the tendency has proceeded more "normally," so to

speak, in England, its present position and future development appear to be more assured. With regard to the "trust movement" in the United States, it has been said that it is clear that such market dominations are not merely temporary phenomena. . . . "The development has more inevitableness, so to speak, in its movement than the public commonly supposes."[1] Industrial combination is regarded as the culmination of the movement towards some mitigation of the influence of competition in the determination of prices. "We are bound to recognize that these combinations are with us in America, and that in all probability they will continue."[2] It must be admitted that subsequent events have upheld this opinion, which was expressed in 1899. For although great changes have taken place in the position of the various American "trusts," it is clear that they occupy a position of the greatest importance in the organization of industry and commerce in U.S.A. Similarly with regard to the Kartell organizations of Germany, where the movement has come to be regarded as a recognized method of organizing industry and commerce.[3] Thus there appears every reason for believing that the combination movement in England, where its development has been peculiarly "normal" and in accord with modern conditions, is likely to constitute a regular feature of industrial and commercial organization. Its persistence under some form or other may fairly be admitted.

However, much more important, and perhaps much more uncertain, is the question as to the probable sphere and influence of the combination movement, and also its ultimate development and general bearing upon English industry. As has been indicated, there exists considerable difference of opinion as to the position of industrial combination in these respects; and prediction

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[1] *The Economic Journal*, June 1899, pp. 165, 167–72.
[2] *Ibid.*, pp. 170, 169–72.
[3] Cp. *infra*, pp. 376–86.

is a very dangerous procedure unless inspired or oracular. Yet it does seem possible to assert that the future development of the combination movement within the various English industries may be broadly determined by a general estimate of the extent to which the "determinant circumstances" are likely to be operative, modified, or neutralized by present tendencies discernible within these industries, or by new developments in economic conditions.

Although it must be emphasized that the "combination movement" in England has many vital characteristics which are peculiarly its own, largely on account of "national" conditions, yet the experience of the United States and Germany (wherein the tendency towards industrial combination has had a longer history) can be of great use in facilitating any general estimate as to its probable development in England. Thus some conclusions may first be indicated from a general point of view, according to the essential character of the tendency towards industrial combination, regarded as an economic phenomenon which has made its appearance as an important factor in the industrial and commercial organization of most countries. The application of these conclusions may then be considered in their "national setting," in order to take account of the modifying influence of economic, industrial, and commercial conditions of a "national" character.

Naturally, the main inquiry must refer chiefly to the "horizontal development" within the general combination tendency, according to the directions in which it has proceeded. As regards the development of "vertical" combination, it has appeared that this is, at bottom, largely a natural or normal development, intricately bound up with the general evolution and working of the iron and steel industries. According to present indications, there is good reason for believing that the tendency towards the development of a "complete vertical organization, controlling a wide range of

products, and based upon the possession of supplies of raw materials," must continue to be a predominant tendency within these industries. This movement towards "the co-ordination and consolidation of large interests" is essentially in accord with the conditions of these industries.

Moreover, the various enterprises are induced to acquire this "complete vertical organization of production," either by deliberately negotiating vertical combinations, or by utilizing the policy of self-development, "in accord with the law that where progress ends retrogression begins." In certain branches of these industries the self-contained or self-sufficient enterprise is the only unit which can attain to the fullest degree of efficiency in production and also in competition. The branches thus situated constitute a very considerable section of these industries, so that the movement of firms towards the acquisition of self-sufficiency and "its peculiar advantages" has well been termed a "most marked feature of the modern iron and steel industries." There appears to be a very general and pronounced movement towards "the co-ordination and consolidation of large interests," largely on account of the very trend of conditions, really "normally," within these industries.

Of course, it is probable that the small firms producing certain classes of iron and steel goods will never be eliminated. For some branches of the iron and steel industries offer special advantages to the small enterprises producing in isolated fashion from purchased supplies of raw material or semi-finished products; *e. g.* the "small trades" of the Birmingham and Sheffield districts respectively, general engineering, shipbuilding, and foundry work, especially that to meet a local demand. However, it seems probable that the manufacture of pig-iron and the heavier classes of rolled steel products—rails, girders, sleepers, bars, billets, plates, etc.—or of the heavy steel products like castings,

forgings, ordnance, armour-plates and of the larger vessels—may tend more and more to become the special sphere of the large self-contained firms. It has also been seen that even the manufacture of tin-plates and galvanized sheets is gradually being influenced by the development of the large self-contained enterprise.

The endeavours of every producing unit are naturally directed towards the acquisition of the maximum degree of productive efficiency and competitive strength. Thus in those branches of the industries where the conditions greatly favour the large self-sufficient firm, the strength or intensity of the tendency towards the acquiring of a complete and extensive organization of production is likely to be cumulative. Moreover, in these branches of industry or commerce where the development of the complete vertical organization occupies a less important position despite its undoubted advantages and utility, it is likely that it will continue to be operative. However, it is not possible, neither is it advisable, to make forecasts with too great certainty. The actual position of the vertical development can only be estimated by close reference to the practical conditions of the various branches of industry concerned. Similarly with regard to any detailed forecast of its possible development, with the additional difficulty that the emergence of new conditions may discount the value of any forecasts based upon present conditions.

As regards the position of the "horizontal" development within the combination tendency—"the representative form of combination"—the task of indicating some general conclusions is somewhat less difficult. Thus as regards its development towards the formation of combinations essentially temporary in character, and of the "hybrid" sales' agencies, the position has already been indicated.[1] Judged according to the various standards of effective combination—the intensity of their organization, their control over production

[1] Cp. *supra*, Chap. v.

and distribution in a satisfactory and continuous manner, their value as a means of diminishing the pressure of competition, maintaining harmony and joint action between combining firms with regard to output, prices, and "participation"—neither the temporary nor the hybrid combinations prove satisfactory under all circumstances. The temporary associations, in particular, fail to realize always the aims of industrial combination, and, as indicated, are likely to be maintained satisfactorily only where special conditions are present.[1] Even the hybrid associations have open to them only a limited sphere, being mainly concerned with distribution, and despite the permanent element which they incorporate, they do not always prove altogether satisfactory.[2]

Moreover, it has been seen that the effectiveness of these two forms of organization depends not only upon the conditions of the industries within which they may be formed, but also upon certain conditions relating to them as forms of business organization. Thus the influence of this special factor in relation to their subsequent development or persistence has to be taken into consideration.[3] It has also been said that there is a natural tendency for the various forms of temporary combination to develop into some form of permanent combination where the conditions of an industry are favourable.

However, the strength of this factor depends very largely upon the conditions of the industry concerned.

Regarding the development of horizontal combination generally, it seems clear that the chief question to be considered refers mainly to the development of horizontal combinations permanent in character, and also to the forms of combination which, by virtue of their effectiveness, possess a power "appreciably monopolistic in character." For this purpose it would appear that

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[1] *Supra*, Chap v, Part i.
[2] *Supra*, Chap. v, Part ii.
[3] *Supra*, pp. 242–60.

the chief points to be considered are: (*a*) Is it possible to regard the tendency towards industrial combination as a normal development, the influence of which is likely to continue? (*b*) Assuming that this be the case, is the sphere or extent of its influence likely to extend so as to embrace industry generally? (*c*) Is the intensity of its operation likely to increase so that the problem of industrial combination will call for urgent solution as the problem of "monopolistic" combination?

With regard to the first question, the position of the vertical development of combination, and that of the temporary and hybrid associations have been generally indicated already as particular forms of combination. It is the position of the general horizontal development —the representative form of combination which is directed towards the elimination of direct competition— that must now be considered. An estimate of the essential nature and meaning of "horizontal" combinations may furnish a useful clue to their economic significance.

It has been well said that industry seems to have been "organizing itself" by means of horizontal combination, during a period wherein the organization of the forces of production seems to be following a period of rapid development in the technique of production.[1] These periods of development have been termed "phases" of industrial development. In the latter came the invention and perfection of the methods or technique of production and distribution, so as to bring about continued reduction in expenditure and to ensure for consumers a uniformly low selling price. In the former period comes a comparative lull in the improvement of technical processes, when the improved organization of industry and commerce, particularly as regards administration, is looked to as a means of increasing the margin between selling prices and costs of produc-

[1] Monopoly and Competition (Gunton), *Lecture Bulletin, Institute of Social Economics*, N.Y., 1899.

tion. It is also agreed that there is a point of maximum growth as regards the advantages arising from the size of the producing unit—the representative firm. Thus it appears that as industry and commerce pass out of the former period, the necessity for superior organization and administration makes itself felt more and more. The concentration of enterprise, organization, and administration by means of combination, vertical as well as horizontal, appears to be a satisfactory means of meeting the need. In an exhaustive examination of the nature of the syndicates of Belgium, M. Georges de Leener [1] lays the greatest stress upon the "normal" character of industrial combination, considering it, in part, a kind of natural development or prolongation of the early rudimentary attempts to restrict competition. Despite the fundamental differences arising from the period of competition that has intervened, which make it unwise to press these resemblances too far, it may be admitted that there exists considerable similarity as to general motives. However, the modern combination movement seems essentially the natural development of a form of organization adapted to meet modern conditions of industry and commerce. One conclusion of the U.S. Industrial Commission was that experience shows that the "trusts" have become permanent organizations in the industrial world. This view seems to be strongly supported by the economic significance of the combination tendency.

Industry and commerce undoubtedly represent organisms which are in a state of perpetual growth. "*La loi du développement d'industrie est la loi de l'évolution sociale.*" [2] The relation of this view to the influence of the social principle and the doctrine of Marx that the more the capitalistic system advances the greater the

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[1] *Les Syndicats Industriels en Belgique* (G. de Leener), pp. 224–6; also *Proceedings of the Académie royale et impériale*, 1906, Vol. i, p. 62.

[2] *Les Syndicats Industriels en Belgique* (G. de Leener), pp. 224–6, and *passim.*

conflict between capitalists is very interesting. So also are the views as to the influence of the force of "personal interest." The growth of the joint-stock-company form of organization tended to reduce the intensity of personal interest by distributing the risks and responsibilities over a larger area. It has therefore been said that the operation of the force of self-interest has altered in its direction, tending more towards co-operative and combined action than towards individualistic competition as a means of attaining its ends.[1] The movement towards industrial combination represents a natural check upon the anarchy of unregulated competition in production, which has arisen from the developing consciousness of collective interest among producers:—"Des moyens d'organiser l'industrie, et de moraliser le commerce"—the natural outcome of the social principle which has long been latent within industry.[2] The régime of the competitive system has been considered a natural reaction against the restrictive operations of the sixteenth, seventeenth, and early eighteenth centuries.[3] Similarly, the tendency towards industrial combination and collective action on the part of producers may be regarded in part as a natural reaction against the unbridled operation of the competitive system and extreme individualism. The pendulum has swung back in the direction of restriction; history may be repeating itself—with differences.

The continuous progress of industry and commerce, their organization and administration under the pressure of the law of economy of forces, has tended towards the concentration of enterprise and production. As the investment of fixed capital increased, a tendency towards over-production and crises arose. The difficulty of adjusting supply to demand becomes all the more

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[1] *Economic Journal*, June 1899, p. 166.
[2] Cp. *Economie Sociale* (M. Tobard).
[3] *Industrial and Commercial History of England* (T. H. Rogers), Home Trade and Domestic Competition.

difficult as industry becomes more concentrated and markets more extended. Industrial combination seems to arise as a natural resource intended to relieve the situation, as a means of establishing some degree of equilibrium between supply and demand. Thus it may be stated that the combination movement is due not to chance or to the mere intentions of organizers, but rather to a "dominant, over-mastering tendency" acting within modern industry.[1]

The operation of the competitive system, especially in England, transformed industry by bringing about a tremendous development in the methods of production. However, combination not only realizes what competition could not accomplish, but seems to be a natural result of the operation of competition; one might almost say a natural and necessary corrective. For it must be admitted that competition cannot directly organize industry as regards production and distribution. It is a method of rivalry rather than a method of organization. When the period of technical revolution had passed, the rivalry of competition became comparatively less important or essential for industrial progress. "The need for organization, long ignored, made itself felt. The demand for it soon became imperious."[2] The operation of the competitive system is hampered by various circumstances which render the satisfactory organization of industry impracticable by means of "free competition" alone. The colossal magnitude of modern transactions, the vast area of modern markets, the comparative lack of information among producers as to the exact needs of the markets, their difficulties on account of rapidly-changing conditions, go to make it impossible for competing producers accurately to adjust supply to demand under all circumstances. There is an inevitable tendency towards over-production, depres-

[1] Cp. *The Evolution of Industry* (Henry Dyer); also "Les Syndicats Industriels," *Revue d'Economie Politique*, December, 1894.

[2] *The Rôle of the Trusts* (*Œuvre courronée*), *Académie royale des sciences*, Tome i, 1906, pp. 41–3.

sion, and low prices. Competition has shown itself incapable of completely organizing the industrial and commercial functions upon which stability depends, unable accurately to interpret supply and demand, the relation between which constitutes one of the main pivots of modern industry and commerce. The competitive system only partially fulfils the necessary conditions of modern industry and commerce. It may sometimes be satisfactory for the consumer, but it has tended to become intolerable and disastrous for the producer in view of the magnitude of the interests involved. Combination, therefore, seems to be an attempt to adjust the relations between production and consumption, supply and demand, to lessen risk and maintain industrial progress.[1] The conditions of modern industry and commerce have tended to make such action on the part of producers essential for self-preservation in many cases. The history of the development of industrial combinations, especially in England, indicates that they have resulted from the growing conflict between the power of independent competitive enterprise and the uncertainty of modern conditions. This uncertainty, as is shown by the character of the motives underlying horizontal combinations, is itself largely the result of the conditions of modern industry; these have intensified and aggravated the unsatisfactory features of the operation of competition, under the "imperious necessity for a continuous outlet for the production of great industry.[2]

The development of horizontal combinations answers to an increasing necessity for "security." It is by increasing the security of modern industrial and commercial organization, by the reduction of the various "risks" involved in the operation of the competitive system, that the "trusts" have developed to play their fundamental "rôle of regulators of the conditions of industry."[3]

[1] Cp. *Le Rôle du trust, Académie royale des sciences, etc.* (1906), Tome i, p. 62.

[2] *Les Syndicats industriels de producteurs en France et à l'étranger* P. de Roussiers), p. 97.

[3] *Ibid.*, p. 98.

By means of combined action, producers have been seeking to introduce greater stability into industry, to make the certain predominant over the uncertain, order over disorder. Industrial combination seems to bridge over the gap in the organization of industry and commerce under the system of "free" competition alone. For although costs of production were decreased, processes improved, and output increased, the naturally unsatisfactory consequences of "excessive" competition were aggravated. Mr. Carnegie once said that Political Economy teaches that products cannot be sold below the cost of production; that doubtless this was true in the time of Adam Smith, but it is no longer true today. "To produce cheaply it is necessary to produce to the full capacity. . . . Continuous production is essential even at a loss. . . ." [1] There is a very important truth underlying this statement. Yet it is generally agreed that at most times there is a very strong tendency towards over-production, and that, save during boom periods, there exist a surplus of productive capacity in a great number of industries; modern crises are often aggravated by over-production, which shows itself in periods of depression in industry and commerce. Industrial combination is well termed a method of organization which is resorted to in order to solve this opposition between the necessity for continuous production and the depression of over-production. The regulation of production and prices largely constitutes its *raison d'être*, and plays an important part among the functions of a horizontal combination after its inception.

The above section may serve to sum up broadly the views which are held as to the general nature and economic significance of industrial combination, apart from the indications given earlier. There appears to be a general and marked agreement that the movement is, at bottom, largely a natural development.[2] It

[1] *Transactions of the Académie royale des sciences*, 1906, Vol. i. (G. de Leener).

[2] Cp. *U.S. Industrial Commission Reports*, Vol. xviii, Summary.

also affords the best point of view from which to examine the question of its persistence as a form of organization within English industry and commerce. The association of employers has been termed "a principle immanent in industrial or social organization." [1] As Adam Smith noted over a century ago, "Masters are always and everywhere in a sort of tacit but constant and uniform combination. . . ." [2] But with the development of industry and commerce, the intensity and purposes of their combination have increased.

Necessity as well as self-interest tends continually to force producers closer together. This position has been well put:—Mr. Mill is right in saying that there is no competition of capitals—there is, however, a very real competition of capitalists. This competition is sharpest in those countries where few opportunities are given to individuals to change from one industry to another—a state of things which is very characteristic of great industrial activity. It seems that the beneficial operation of competition is at an end, and that if the existing body of producers is to exist some other expedient is to be adopted by which a fair profit can be gained by a national industry. The expedient which is being adopted is that of associating all undertakings, regulating the output. . . .[3]

This seems to have underestimated the importance of the horizontal combinations, although their economic significance is rightly interpreted: Attempts of this kind have frequently been made, but generally end in disaster at the end. . . . Such attempts . . . have constantly been made and have constantly failed. . . . Although the expedient may enrich individuals, it is essentially transitory. . . . The power of combination as a check to the reputed evils of competition is precarious, temporary, and liable to a ruinous reversal.[4]

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[1] *Les Syndicats industriels de producteurs* (P. de Roussiers), §§ 85–93.
[2] *The Wealth of Nations*, Bk. i, Chap. viii.
[3] *The Industrial and Commercial History of England* (Thorold Rogers), p. 376.
[4] *Ibid.*, pp. 377, 378, 381.

These conclusions are hardly justified by the actual fortunes of horizontal combinations subsequent to the time at which they were expressed, particularly as regards some of the "trust" amalgamations, for example. The latter are some of the most successful business undertakings in English industry, and have proved themselves effective expedients for checking the disastrous effects of the competitive system, at any rate; they have every prospect of a career of continued success. Similarly, it is certain that continued attempts will be made to restrict internecine competition by means of temporary associations. This is the more probable from the very nature of things, for such attempts already have a long history of development, right from the earlier times of English industry and commerce—*e. g.* in the coal trade.

However, it seems quite clear that their effectiveness and the continuity of their operation must depend largely upon the nature of the determinant conditions indicated earlier.[1] Similarly with regard to the "hybrid associations," which represent a form of organization well suited to the conditions of some industries and the desires of enterprises engaged within them. The "individualistic" character of the English producer makes amalgamation appear an undesirable course in some circumstances. It has been said that the only real, effective check to excessive and ruinous competition is "the natural check"—the likelihood that the weaker competitors in the struggle will succumb, that in a rough way the survival of the fittest will be the result, and that industry will ultimately right itself.[2]

In the very nature of things, this process of elimination making for the survival of the fittest could not continue indefinitely; neither producers nor consumers could afford to stand by impassively while the operation

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[1] Cp. *supra*, Chap. v.

[2] *Industrial and Commercial History of England* (T. H. Rogers), pp. 381–2.

of this "natural check" to excessive and ruinous competition worked out their salvation, slowly and painfully. Is it not better to regard the tendency towards industrial combination, the horizontal development in particular, as a logical conclusion of this process of elimination, or survival of the fittest? In a large number of industries, especially the "great industries," a point has been reached at which its operation, as among the various enterprises, becomes "internecine" and not "eliminating." Thus industrial combination intervenes as a natural solution of the difficulty. Still, if it is recognized that the combination tendency is a normal development, a "continuation of industrial organization," it must also be admitted that its persistence and future development also depend upon the various elements that contribute to determine the general progress of industry and commerce. It is a form of organization which is bound up with the natural development of the latter, which represents an organism in a state of perpetual growth, of change and of decay in various directions. Even within the combination movement itself there has been, and continues to be, a process of continuous development—"the trusts were not born as trusts." [1]

The general position in England has been excellently summed up by one writer: "Neither combination nor agitation should be driven underground; . . . To strike at the methods adopted by combinations is not easy without at the same time repressing measures blamelessly adopted by the individual trader. . . . It would, indeed, be an extraordinary thing to strike at competition in the name of competition. . . . The case is different in the United Kingdom, where the continuance of amalgamations and associations depends solely upon their efficiency as instruments of production and distribution. Too little attention has hitherto been given to this

[1] *Les Syndicats industriels en France et à l'étranger* (P. de Roussiers), p. 14.

normal development of combination, and it has too often been lumped in the same condemnation with the most oppressive American trust or German kartell. . . . The point cannot be too much emphasized that we have not in this country to face the American problem or the German problem, but a problem of our own—the modification of society by a new organization of industry, a more efficient method of production (and one might add of distribution also), evolving normally without artificial stimulus." [1]

Truly, the continuance of combinations, as a form of industrial and commercial organization in England, does depend in a most fundamental manner upon their efficiency as instruments of production and distribution. It has been seen that this depends, in turn, upon a variety of other circumstances, which have been termed the "determinant conditions of combination." Thus we are again brought face to face with the problem which forms the most important part of the present inquiry—the application and operation of the "external conditions" of combination within the various British industries. Upon these the effectiveness of industrial combination and its ultimate fortunes within British industries appear to depend very largely.

(2) Granting that the movement towards industrial combination represents a stable form of organization, is its sphere of influence likely to extend? Of course, this is a question which is largely bound up with the former inquiry. Combination is not only ineffective but really impracticable where the "external conditions" are unfavourable. But it must also be noted that in some cases the necessity for combination tends to increase in proportion as certain of the most fundamental external conditions are fulfilled. Thus competition becomes more intense and disastrous as the competitors become fewer and stronger; but this, in

[1] *The Trust Movement in British Industry* (H. W. Macrosty), pp. 344–5.

turn, creates a position which facilitates combination. Industrial combination represents the development of a form of organization which largely results from the operation of a series of various circumstances.

Thus it becomes a desirable or practicable form of organization in those branches of industry wherein the unrestricted operation of the competitive system has proved very unsatisfactory to the existing enterprises. One writer has even declared that the field of action of the "trust" is limited to the "great industry," and that they lose all *raison d'être* except where the "great industry" is concerned. The development of industrial combination tends to necessitate a preceding or existing "concentration of enterprise" that "great industry" alone can offer. Otherwise, they are likely to be impracticable even where they are attempted as being desirable.

Thus it has been shown that the trusts are impracticable without some preliminary concentration of industry, which is a necessary condition on account of the very nature of the former; that this concentration of industry can realize itself without resort to the "trust movement," though the latter must be preceded by some degree of concentration of enterprise. Industrial combination continues and hastens this tendency towards industrial concentration which arose out of the operation of the competitive system. The very characteristics of the tendency towards industrial combination right up to the present time seem to indicate, of themselves, that its sphere of operation or extent must be limited.[1]

However, in some branches of industry, especially as regards the work of distribution, there seems to be a tendency towards the "decentralization of functions" in order that enterprises may meet certain conditions of production and distribution. Thus there arises a kind

[1] Cp. *Les Syndicates industriels en France et à l'étranger* (P. de Roussiers), *passim*; *Monopole, Kartelle u. Trust* (Levy), *passim*; *U.S. Industrial Commission Reports*, Vol. xviii; *The Trust Problem* (Jenks); *The Trust Movement in British Industry* (H. W. Macrosty).

of contradiction or conflict between the tendency towards the "concentration of enterprise" as a means of reducing costs and increasing profits, and that towards "decentralization" or "devolution" which arises largely on account of market conditions.

From this point of view industrial combination seems a means of ending this contradiction, just as it appeared to solve the opposition between the necessity for maximum and continuous production and the many difficulties which arose from over-production. The effective combination can successfully concentrate production, distribution, and administration, and also adapt its policy, particularly as regards the conditions of distribution, to any measures of devolution which may seem desirable or advantageous. The above seems to afford further indication that the sphere of the "combination movement" is likely to be limited in extent to the "great industry," for it answers "to particular exigences in the technique of the latter." [1]

It appears, therefore, that the tendency towards industrial combination does not and cannot arise in any haphazard fashion. It is not the result of chance occasions or of a combination of accidental circumstances, but rather of a logical process of industrial development; neither can combinations be found in every branch of industry without discrimination, nor are they practicable or effective through the existence and operation of artificial conditions alone. The combination movement is closely involved with certain natural or normal tendencies operative within industry and commerce; the conditions influencing the enterprises engaged within the latter fundamentally determine the development and effective operation of combinations formed between various enterprises.

Of course, there are a number of other circumstances which exercise an important influence, especially favourable conditions of an "artificial" and "national" char-

[1] Cp. *Le Rôle du Trust* (G. de Leener), pp. 62–64 ; *Les Syndicats industriels* (P. de Roussiers), p. 34.

acter, as protective tariffs, discriminative railway rates, national temperament and legal conditions, and natural resources. The existence of such conditions tends to hasten the "concentration of enterprise," and also to intensify the effects of conflict which arises between the necessity for continuous and maximum production and the disastrous consequences of over-production; and the concentration of enterprise, in turn, facilitates the development of industrial combinations.

However, it has been seen that the combination movement within British industry has been comparatively uninfluenced by fostering conditions of an "artificial" character. The favourable "external conditions" and the "differential advantages," which influence the various combinations so powerfully, are largely the result of the natural circumstances or normal development of the industries wherein they are formed. Thus it is broadly true to conclude that the future sphere, and also, in a large measure, the fortunes, of industrial combination in British industry are intimately involved with the tendency towards the "concentration of enterprise." For it appears, from the most general point of view, that the latter is an essential preliminary to effective combination, just as the movement towards combination may be said to continue and hasten the tendency towards concentration of enterprise as between fewer and fewer firms.

It is therefore important to consider the position of this "inner" normal tendency towards "concentration of enterprise" in British industry. It has been stated that as, on the whole, the tendency in manufacture is towards the fixation in plant of ever larger masses of capital, the trust organization is likely to grow, though it may for an indefinite period, or possibly for ever, fail to show itself in certain industries.[1] However, it is well to note that this "tendency towards the fixation in plant of ever larger masses of capital" is, in turn,

[1] *The Economic Journal*, March 1910, pp. 89, 90.

"determined" and modified by a variety of conditions according to the particular industries concerned. Thus, some industries present special facilities for the investment of large amounts of fixed capital, or, in fact, make such investments essential for success. Other industries remain firmly the sphere and stronghold of the small enterprise which can make full use of existing conditions. There seems to be a more deeply-rooted cleavage between industries which call for enterprises with large resources and those which can be profitably carried on by small firms than is generally supposed. The relation of the circumstances of the latter to the "external conditions" of combination helps to explain the comparative lack of "concentration of enterprise," and also of industrial combination within them. Thus it may be well said that "the trust organization" may "for an indefinite period, or possibly for ever, fail to show itself" in such industries; *e.g.* it has been seen how even the simplest forms of combination are ineffective or impracticable among firms making coarse papers, leather, joinery, worsteds, the coarser cotton and woven fabrics, yarns, general engineering and foundry products, Birmingham hardware, etc.

The character of the "external conditions" has an important bearing upon the position; thus, where the firms are small, they are also usually numerous and easily multiplied. The relation of industry to foreign competition must also be taken into account; for "if, as some say, England will be able to escape the consequences of foreign competition by exchanging its foreign sale of coarse goods for a more highly-priced trade in finer or more finished products, the external conditions favouring combination will be created *pari passu*."[1] The influence of this tendency must be considered in addition to the factors which have already placed a number of English industries in a favourable position in this respect.

[1] *The Economic Journal*, March 1910, p. 88.

However, it is clear that it is hardly possible, even temporarily and for the purposes of inquiry, to isolate any particular circumstances and consider the possibilities in relation to the probable sphere of the combination tendency in British industry. This, like the continued effectiveness of existing combinations, depends very largely upon the joint action of the various determinant conditions. Modifying the scheme arranged by one writer,[1] the position might almost be stated generally as follows—

The strength and "practicability" of the tendency towards industrial combination within an industry increases in proportion	1. As the economic wastes due to the operation of internecine competition increase	which increase according to the intensity of internecine competition
	2. As the number of competing units decreases	according to the degree of "concentration of enterprise."
	3 (*a*) As the size and the amount of capital required by each competing unit increases, and therefore	according to the degree of "concentration of enterprise."
	(*b*) As the initial capital required by new enterprises increases	
	4. As the location, general circumstances, and promotion facilities of the existing enterprises are favourable.	
	5. As there exist "differential advantages," natural conditions, etc., favourable to existing enterprises.	
The intensity and the economic wastes of competition increase	(*a*) As the number of the competing enterprises decreases, and	according to the degree of "concentration of enterprise."
	(*b*) As the amount of capital required by competing enterprises increases	

Of course the above outline is expressly general in character, yet it serves to indicate how interwoven are the various factors which influence the tendency towards industrial combination.

[1] Cp. *Monopolies and the People* (Baker), pp. 200–4.

It now seems possible better to approach the important question which still awaits consideration. For "a slight weakening or retardation of the circumambient coercion of competition may be a significant phenomenon, especially if it is widespread, even if it is still very far removed from 'monopoly' or autonomous control of price." [1] Much more significant, then, is the alleged tendency of combinations to become capitalistic monopolies, particularly within the "great industry." It is true that the intensity of the operation of the combination movement is likely to increase so that the problem of industrial combination will call for urgent solution as the problem of "monopolistic" combination? Does the tendency towards industrial combination also represent or involve an "inevitable tendency towards monopoly"?

It is noticeable that a good deal of ambiguity exists as to what exactly is implied by the terms "monopoly," "monopolistic combination," "capitalistic monopolies." Thus some have insisted that monopoly can exist only by deliberate, express grant from a sovereign power, and cannot be created by contract between individuals or capitalistic enterprises.[2] However, it seems better to consider that "monopoly" can extend from a right created by government to a condition which is the result of the action of private individuals; that "monopolies" are varied in character, and can arise from a variety of sources—natural, legal, and capitalistic. Thus a combination of enterprises, or even an individual enterprise, can possess monopolistic powers when it exercises such a degree of control over the supply of a commodity as to be able to regulate prices to an appreciable degree, and maintain them at "something more than the normal competition levels." [3] The proportion of the total supply

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[1] *The Economic Journal*, March 1910, p. 91.

[2] Cp. *The Truth about the Trusts* (Moody); *Trusts, Pools, and Corporations* (Ripley), pp. 428–73.

[3] Memorandum to the House of Commons on the Fiscal Policy, 1908 (A. Marshall).

controlled by such enterprises is an all-important consideration, since the degree of price-control is largely dependent upon this.[1] Monopoly, therefore, seems a question of degree; thus it is sometimes qualified as being "complete," "partial," "temporary," and "incomplete." The important point for the present inquiry is whether the combination of a number of enterprises enables the resulting unit to exercise a "dominance approaching monopoly" over the branch of industry concerned, or, as an American judge decided, whether the combination "has exercised or can exercise monopolistic power."

Apart from the difficulty as to the correct interpretation of the terms "monopoly," "monopolistic combination," considerable divergence of opinion exists as to the ultimate significance of industrial combination, regarded as a form of monopoly. Thus some, usually with socialistic proclivities, have considered that the competitive system of industry has been rapidly giving place to monopolistic combinations, against which "nationalization" is the only resource; that competition has worked itself out to its logical conclusion—monopoly: "le monopole est le terme fatale de la concurrence qui l'engendre par une négation incessante d'elle-même,"[2]—competition has destroyed competition, "dog has eaten dog." The development of monopolies has been considered "the natural consequence of the régime of economic liberty under which 'great industry' has developed," exhibiting "the paradox that the more perfect competition the more complete the monopoly which results from it"; so that industrial combination is a result of industrial evolution, and gravitates around monopoly, whatever the form it may take.[3]

On the other hand, directly opposite views are expressed as to the ultimate significance of the "trust

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[1] *U.S. Industrial Commission Reports*, Vol. xviii, pp. 34–5.
[2] *Les Syndicats Industriels* (G. de Leener), pp. 34.
[3] *Ibid.*, pp. 34, 244.

movement"—that industrial combination does not tend to monopoly, but really initiates a "new régime" of competition under which the laws of Supply and Demand are still preponderant as regards the regulation of output and prices. If the attempt to secure "undue profits" is successful for a time, fresh competition is courted, which must be bought out or crushed interminably. "I have never known the attempt to defeat the laws of competition to be permanently successful—the public may regard the trusts and combinations with serene confidence," said the head of one of the largest trust amalgamations.[1]

However, it is significant to notice that an intermediate position is held in the above connection. Thus it is said that although the tendency towards industrial combination may continue, and may also increase in intensity, the resulting organizations can become monopolistic only within certain well-defined limits, even in the sphere of the "great industry." Although this conclusion has been termed "oracular," it is probably nearer the truth than might be considered at first. Thus it has been said that "the future belongs neither to the prophets of individualism nor to the ideals of the social democrats."[2] For it is clear that there are a number of circumstances which place strict limits upon the operation even of the "effective" combinations.

It has been argued that large amalgamations, exercising monopolistic powers, are inevitable in the various branches of the "great industry," because (*a*) such consolidations possess great advantages over independent enterprises in production and distribution through the "economies of combination"; (*b*) the cheaper methods of production and distribution must always displace the more expensive, so that production and distribution on the largest scale possible tend to become

[1] Cp. *Monopolies and the People* (Baker), p. 24.
[2] *Trusts* (von Halle), p. 149.

the only practical and profitable methods available; (*c*) the capital and resources controlled by the large consolidations endow them with such "powers of destructive warfare" as to prevent potential competition from becoming actual.[1]

However, it has been shown that the "economies of combination" are frequently over-estimated, and do not, of themselves, necessarily constitute a vital or fundamental "basis of monopoly" making possible a monopolistic regulation of prices, even when production and distribution are on the largest scale possible or profitable. The powers of "destructive competition" also appear to be largely dependent upon the position of the consolidation as regards the various "differential advantages." Similarly as regards the influence of massed capitals in increasing the initial difficulties of would-be competitors, and thus deterring potential competition. The most fundamental consideration is as to whether the position of a combination, with regard to existing or potential competition, is such that its control can become "appreciably monopolistic" in character. Thus the degree to which the circumstances of an industry constitute favourable "external conditions of combination" largely determines the sphere and effectiveness of any form of industrial combination; and the fully effective combination is certainly one which exercises a control that is "appreciably monopolistic" in character. The operation of the "external conditions," therefore, has an important bearing upon the possibilities of "monopolistic combinations."

It seems that the general problem resolves itself into the question as to whether competition can be finally suppressed even within the "great industry." Is there no natural check upon monopolistic combination, or can a combination of enterprises secure and exercise permanently the powers of a monopoly, in the stricter senses of the term? Apart from the views indicated above,

[1] *Trusts, Pools, and Corporations* (Ripley), "Survey of Literature."

one writer has expressed a very decisive opinion in this connection:—The chief pitfall of the trust is the certainty of new competitors. Competing concerns, content in the reasonable prices, will supply the market. Even after a trust becomes a monopoly it is never safe. Its vast profits are a tempting prize. Capital, ever ready to make daring ventures in the hope of great returns, is a power that cannot be suppressed by the trust. It will be unceasing in its menace, and cannot be subdued.[1] At a conference at Chicago, various trust magnates insisted that every attempt to monopolize the manufacture of any staple article carries within it the seeds of failure; also that no body of men have been or will be able permanently to control any article of trade and commerce.[2] It has been said that even in industries in which large capital is employed, the position of the trust represents a temporary reward for a superior form of business organization, through which it does not acquire absolute monopoly, but only such a degree of control over production and distribution as will not tempt new competitors into the field. Thus the British Iron Trade Commission reported how even the gigantic enterprises in the iron and steel industries of America have been affected by potential competition becoming actual.[3]

The maintenance of potential competition is, therefore, all-important in industries where combinations of enterprises reveal a tendency towards monopoly. "The most obvious remedy for monopoly is the creation of new competitors."[4] As a means of controlling the monopolistic tendencies of combinations it is necessary that competition should remain alive. It works more smoothly . . . when in the potential form rather than

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[1] *The Corporation Problem* (Cook), p. 237.

[2] Cp. *Trust, Pools, and Corporations* (Ripley), pp. 447–449; *The Truth about the Trusts* (Moody); *Les Industries Monopolisées* (P. de Roussier), Chap. 10.

[3] *Report of the British Iron Trade Commission*, 1902, *passim*.

[4] *Monopolies and the People* (Baker), p. 204.

in the active form, provided only that in the potential state it has normal scope and efficiency.[1] Only where combinations are facilitated by favourable "external conditions," and possess various "differential advantages" which place a check upon the growth of new competitors, is any monopolistic control of prices in any way free from the restraining influence of potential competition. Assuming that potential competition cannot easily become actual, the monopolistic powers of a combination are still subject to various conditions which are naturally restrictive. Thus, for example, however extensive the control of a combination over supply may be, it cannot control demand, which must constantly exercise a limiting and restrictive influence upon its operations. In fixing prices the power of the monopolistic combination must constantly be modified by consideration of the reaction of prices upon the present and future demand for its products. The nature of a commodity and the elasticity of the demand for it are becoming more and more "responsive" to the variation of prices. The possibilities of substitute commodities and processes, and the invention of new methods, exercise a very important influence upon the character of the "effective" demand for commodities. Thus it comes about that the prices fixed even by a monopolistic combination, or the "price of monopoly," is not "upon every occasion the highest which can be got, or which can be squeezed out of the buyers."[2] One of the features of modern economic study is the great advance which has been made towards a concise and thorough analysis of "the theory of monopoly," of the considerations which modify the operation of a combination in fixing prices even where its control over a branch of industry is "appreciably monopolistic." It has been shown that the progress in clearness of the theory of monopoly has had practical consequences of great

[1] *The Control of the Trusts* (J. B. Clark), pp. 54–60.
[2] Cp. *The Wealth of Nations*, Book i. Chap. vii.

importance.[1] "Monopoly price" is recognized as the price which produces the "maximum net revenue," and not necessarily the highest price.[2] The monopolist has to take systematic account of the relation between prices and the conditions of supply and demand. Thus it has been said that "to the extent that they exercise monopoly powers, self-interest will lead the trusts to obey the principles governing monopoly price," and that even some of the strongest trusts must consider the possibility of enormously high prices reducing demand, as well as that of new competitors.[3] One trust magnate thought it a "matter of good policy for a combination enterprise which carries on seriously not to abuse its powers," nor "to make so much profit in six months that it will ruin itself for the following twelve or eighteen months."[4]

The importance of the above considerations is such that where large combinations have enormous interests at stake, and must largely rely upon "their efficiency as instruments of production and distribution," there are considerable guarantees for moderation in its policy. As regards a general conclusion, it has even been said that such expedients to regulate competition, output, and prices in an industry are always liable to failure unless (*a*) there is no other source of supply, (*b*) no substitute for the commodity produced, (*c*) no further economy in its use, and lastly (*d*) unless the commodity is a necessary of life.[5] It is clear that these conditions are fulfilled to some degree only in a comparatively small number of industries, so that further important restrictions upon the possibility of monopolistic combination are indicated.

It remains to be noted that the term industrial com-

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[1] *Quarterly Journal of Economics*, Vol. xxii, pp. 384–398; 626–639.
[2] Cp. *The Principles of Economics* (A. Marshall), Book v, Chap. xiii.
[3] *The Economic Journal*, March 1910, p. 90; *Introduction to Economics* (Seager), § 274.
[4] *Le Rôle du Trust* (G. de Leener), p. 62; *U.S. Industrial Commission Reports*, Vol. i, §§ 1032–5.
[5] Cp. *The Industrial and Commercial History of England* (Thorold Rogers), pp. 376–8.

bination does not, of itself, necessarily involve or imply monopolistic control; the monopolistic element is something distinct from the form of organization.[1] By means of combination the enterprises engaged in an industry are able to utilize to the fullest degree any favourable conditions or differential advantages which may constitute "bases of monopoly." It cannot be said that industrial combination, as a form of organization, can create such circumstances. Monopoly and monopolistic conditions are rather the result of legal, industrial, natural, or economic circumstances.[2] Where a combination is so effective as to be appreciably monopolistic in its control, investigation always reveals the existence of some conditions of an exceptional character. The power of a monopolistic combination of enterprises is largely determined by the nature of these conditions, which may, of course, vary in different industries.

Thus it has been said that the more natural the bases of the monopolistic combinations, the less serious the danger which their existence presents in the various spheres and relations of industry and commerce.[3] In England, where the powers of combinations are "appreciably monopolistic" in character, the "bases of monopoly," as also the favourable "external conditions" of combination, have been seen to arise mainly through the normal development or working of the various industries concerned. Differential or monopolistic advantages arising from the influence of fostering conditions of an "artificial" character have been conspicuously lacking. Thus the development of industrial combination has not only been considerably retarded and modified in England, but the nature of the problem of monopolistic combination has also been greatly influenced.

[1] *The Truth about the Trusts* (Moody), Introduction.
[2] Cp. *Monopolies and Trusts* (Ely).
[3] *Les Industries monopolisées aux Etats Unis* (P. de Roussiers), Chap. 10.

This is particularly evident as regards the relation of English combinations to foreign competition—so important an external condition. Whatever the position that may be acquired by an enterprise or by a combination of enterprises in an English industry, the general operation of the Free Trade system must tend to keep the possibilities of potential competition at their maximum. Not only is the influence of the protective tariffs lacking as a means of bolstering up the attempts of combinations to exercise monopolistic powers, but "normal scope and efficiency" is maintained for the operation of potential competition as a means of holding such attempts in check. However strong a combination of enterprises may be as regards possible competition from home firms, it must always take into consideration the relation of policy to foreign competition even in its home markets.

The Free Trade system, as operative in England, really dominates the situation to a very considerable degree. It has been seen that if an effective combination is to be formed between the enterprises engaged in an English industry, it is essential that they should possess some "differential advantages" giving them a favourable position with regard to foreign competition. Still more essential is this condition if the combination is to exercise powers "appreciably monopolistic" in character. Moreover, where English enterprises occupy such a position, it is not the result of accident or artificial protective measures, nor is it a "sinecure." Speaking generally, it is the result of "industrial superiority," or excellence, or differential advantage in production and distribution, acquired "normally" through enterprise, natural, traditional, or economic advantages with the development of industry, and maintained only by strenuous effort. All the truer is the statement that "in the United Kingdom the continuance of amalgamations and associations depends solely upon their efficiency as instruments of production

and distribution";[1] or that "the future of the trust movement is bound up with the technical requirements of efficient production."[2]

Thus the operation of Free Trade not only tends to compel the maximum degree of efficiency on the part of combinations of firms, but also moderation in policy, whatever the degree of their effectiveness as a form of industrial combination. With our extensive seaboard and abundant transport facilities, the influence of foreign competition, unchecked by protective tariffs, must provide a salutary check upon any tendency of combination towards becoming injuriously monopolistic or oppressive. The possibility of "International Agreements," formed between enterprises in England and competitors in other countries, operating with much the same effect as protective tariffs, must not be overemphasized. It is hardly possible for such agreements to "negative" our Free Trade position, since they represent a form of "collective bargaining" which necessitates the pre-existence of strong national combinations to be the contracting parties to such agreements. They tend rather to follow than to facilitate or foster national combinations, to be a form or "method" rather than a "means" of combination. It is also found in actual practice that international agreements are not easily formed nor effectively maintained unless special conditions are present. There is a necessity for constant modification on account of differences in national conditions, in the position of the various enterprises, their markets, and mutual relations.

It appears, therefore, that the conclusion, once termed "oracular," may prove to be nearer the truth than was imagined. As regards the ultimate development of the combination tendency, the future may indeed "belong neither to the prophets of individualism nor to the ideals of social democrats." The continuance and the effec-

[1] *The Trust Movement in British Industry* (H. W. Macrosty), p. 345.
[2] *The Economic Journal*, March 1910, p. 89.

tiveness of industrial combinations must depend upon the degree to which the various "determinant conditions" of combination are fulfilled in the various industries. So also, in the main, with regard to the extension of the sphere of industrial combination. These conditions, in turn, largely determine the possibility of a combination exercising powers "appreciably monopolistic in character." It is also significant to notice that economic conditions have been working very strongly in favour of industrial combinations.

History is said to repeat itself, though usually with differences. Some years ago the opinion was expressed that "the economist may soon find himself confronted in modern life with some of the ideas underlying the old demand for just prices and reasonable wages.[1] The trend of events seems to be working out the fulfilment of this prediction in several spheres of economic and social life. "There is a feeling, which is natural and generous, that a reasonable profit should be obtained in all industrial callings, and that if some sacrifice is demanded from the public it should be borne patiently."[2] The position of industrial combination is all the more assured in that it represents a form of industrial organization that is connected with one of the most urgent and difficult problems of modern society—a more equitable distribution of the products of industry than is made possible by the operation of the competitive system.[3]

The advantage of the producer may ultimately prove to be to the interest of the consumer. The saving of "economic wastes," the mitigation or perhaps the elimination of the disastrous effects of internecine competition with the retention of its beneficial activities, the increased steadiness of industry and commerce, must

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[1] *The Economic Journal*, June 1899, p. 171.
[2] *The Industrial and Commercial History of England* (Thorold Rogers), pp. 376–8.
[3] *The Economic Journal*, June 1899, pp. 171–2.

tend to be ultimately to the advantage of all sections of the community.

It has been said that "industrial organization seems to oscillate between two opposite poles which it never attains but which it approaches more or less according to the time." [1] These poles are free competition and absolute monopoly. Thus, in the earlier periods of industry and commerce in England there were various devices for restricting competition and establishing various forms of monopoly—guilds, corporations, patents of monopoly, etc. The end of the eighteenth century marked the beginning of the competitive system as the predominant method of organizing industry and commerce. The greater portion of the nineteenth century, say until about 1880, witnessed the full sway of the competitive system and individualistic principles. But, as was indicated at the outset, with the close of the nineteenth century and the opening of the twentieth comes another reaction towards the restriction of competition. The differences in the repetition arise from altered conditions of industry, commerce, and social organization, changed or additional motives. Thus it has been said that combination is no new thing, although the modern movement possesses distinctive features through the existence of conditions peculiar to this stage of economic development, which work in favour of those advocating combination and against those who resist it.[2]

The position of industrial combination in the above respects certainly calls for attention; above all, it would seem necessary to concentrate attention upon the operation of combinations in particular industries. Of the wider problem,—the distribution of the social product more equitably than is possible through the unrestricted operation of the competitive system,—it is well said that it will soon have to be dealt with in some form or other,

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[1] Cp. *Les Syndicats Industriels*, etc. (G. de Leener), pp. 1, 30.
[2] *Economics* (Hadley), § 167.

"even by the practical politician."[1] The problem of investigating the development of the tendency towards industrial combination, its causes and determinant circumstances—what has been considered one narrower aspect of the wider question above, is very difficult and diverse, exacting and elusive. Above all, its treatment calls for the fullest inquiry and discrimination, particularly as regards its varied character and the conditions of the various spheres within which it arises, rather than for general repression and condemnation.

[1] *The Economic Journal*, June 1899, p. 171.

APPENDIX

It may be rightly considered that general survey of the problem of industrial combination has already proceeded far enough, and that the present need is rather for a more detailed investigation of the different parts of the general problem, especially its development in particular industries. For this purpose it is better, if not necessary, that there should be available a series of monographs dealing with the position of various industries. For it is quite clear that a thorough understanding of the development and working of the different industries is necessary in order to estimate or investigate the position of the combination movement within them. In this respect, Germany is more fortunately situated than England. Thus a good deal has been done towards a detailed analysis of the position of combinations in particular industries; *e. g.* the manufacture of pig-iron—*Die deutschen Roheisensyndicate in ihrer Entwicklung zu einem allgemeinen deutschen Roheisenverbande* (August Hillringhans); the production of coal in Germany—*Monopolistic Combination in the German Coal Industry* (F. Walker); *Der deutsche Stahlwerksverband* (W. Kollmann) deals with the manufacture of steel in particular. The following article, reprinted from the *Economic Journal* through the kind permission of the Editor, deals with the position of the Rhenish-Westphalian Coal Syndicate, and may be of use as illustrating some of the conditions referred to earlier.[1]

[1] *The Economic Journal*, March 1912.

The Rhenish-Westphalian Coal Syndicate.

The Rhenish-Westphalian Coal Syndicate, the combination of colliery firms which since 1893 has controlled almost the whole of the coal, coke, briquettes and by-products produced in the "Ruhr District," (Germany's chief coalfield) is, without doubt, one of the most remarkable organizations in modern industry. Unique in many respects, it has been rightly termed the largest and most effective combination in Europe, if not, indeed, in the whole world. . . .[1] The very existence of such a combination is indeed a source of considerable wonder to those acquainted with the "fighting trade" prevailing throughout the English coalfields, and the inglorious career of combination schemes therein, ever since the dissolution of the Newcastle Vend in 1844. The difficulties to be encountered are only too well known to those connected with the English trade.

The agreement upon which the Rhenish-Westphalian Syndicate is based expires in 1915, and for some time already, coal producers, and the general public in Germany as well, have been anxiously discussing the prospects of its renewal. Their anxiety is all the greater owing to the uncertainty as to the renewal of the Stahlwerksverband, which expired in 1912; for it is believed that both syndicates must stand or fall together. The *débâcle* which would follow the dissolution of either has drawn the attention of the Government to the matter. It is openly maintained by prominent coal-owners that the Government will insist upon the renewal of the Coal Syndicate, as an organization essential to the welfare of the industry and those dependent upon it. The Prussian Secretary of State for Commerce has stated that the Government was even ready to become a

[1] Cp. *U.S. Industrial Commission Report*, Vol. xviii, Introduction and Chap. v.

member of the Syndicate, provided it received sufficient guarantees for the protection of the interests of the public; and that its renewal was desirable on grounds of common economic interests, since its dissolution would greatly affect the position of German industries, workmen, individual communities, and even the revenue interests of the State." [1] The Government has already compelled the renewal of the Potash Syndicate (of which it is a member), and this precedent is being freely quoted. Of late years the Syndicate has been strengthening its position, and its policy as regards output and prices has received considerable attention. Whatever its future may be, the present juncture seems convenient for some indications of a few general conditions which have determined its successful development up to the present.

The events which led up to its formation are briefly as follows. The colliery firms of Rhenish-Westphalia had suffered very severely from their mutual competition and consequent irregularity of production. Increasing prices greatly stimulated production; with the receding tide producers undercut each other recklessly, and, reluctant to reduce output, aggravated the ensuing depression. This led to a period of experiment with various forms of combination from 1877 onwards. Finally, in 1893 (a time of severe depression) the Rhenish-Westphalian Coal Syndicate was established to combine all the colliery firms in Rhenish-Westphalia. In 1903 the Syndicate was renewed upon a much firmer basis to continue until 1915, the Coke and Briquette Syndicates being merged with it.

Its avowed objects are the cessation of price competition, the regulation of production between the members, and the attainment of lucrative if moderate prices whereby fluctuations of output and prices may be minimized. So far, these aims have been realized to a surprising degree. The "Ruhr District" produces

[1] Cp. *Diplomatic and Consular Reports, Germany*, 1911, Cd. 5465–166, pp. 13, 16 and *passim*.

about sixty per cent. of Germany's coal output; in 1910 its production was 86,846,599 tons, of which only 5,492,257 tons came from non-syndicated mines—fiscal and private.[1] The increased coal export falls largely to the credit of the Syndicate.[2]

The organization by which the aims of the Syndicate are attained may be explained briefly thus. To eliminate mutual competition, the Syndicate acts as a corporate sales' agency for all the products put on the market by member firms. It is registered as a joint stock company, with a nominal capital of 900,000 marks (in shares of 300 marks each), held exclusively by the combined firms, and invested for the most part in a transport undertaking. From its palatial headquarters at Essen the Syndicate carries on the purchase and sale of coal, coke and briquettes, the acquisition of mining land and shares, and the operation of any enterprises concerned with the storage, sale, transportation, or extended production of mining products.[3] It has the ordinary organs of the "Actiengesellschaft"—the General Assembly, Supervisory Board, and Executive Committee, each with the usual powers and functions. By a contract with the member firms, individually, it undertakes to purchase and sell the whole of their products under agreed terms. Purchases can be made from firms outside the combination should necessity arise.

The "General Assembly" elects annually a third of the Supervisory Board composed of nine members, each 300 mark share carrying the right to one vote. This Board appoints the Executive Committee, and exercises general supervision over the Syndicate's operations. The latter committee, consisting of four members, carries out the chief functions of the Syndicate, *e. g.* the purchase and sale of the members' products, the determination of accounting prices for purchases, and actual

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[1] *Diplomatic and Consular Reports for Germany*, 1911, Cd. 5465–166, pp. 68–72. [2] *Ibid.*, p. 71.
[3] Regulations of the Syndicate.

selling prices, the auditing of the accounts of member firms, and the proposal of fines for detected breaches of agreements; also the suggestion of levies upon the member firms to cover the expenses of the Syndicate, which has no profits or losses in the ordinary sense.

For the organization of sales the Syndicate is divided into four departments, each controlling specified areas. A special selling agency deals with all orders under 6000 tons, according to the locality. The wholesale dealers in competitive districts are organized by the Syndicate into "Kohlenkontore," and given exclusive rights over the Syndicate's products, conditionally and under its direct control. Such companies are located at Dortmund, Bremen, Cassel, Hannover, Magdeburg, Utrecht, and at Düsseldorf for the Rhine trade. Price-cutting among the wholesale dealers and middlemen is prevented, for the Syndicate prescribes minutely the conditions under which they shall deal in its products, and thus regulates their distribution completely.

The combined collieries contract to sell all their products to the Syndicate, and to join with it for the maintenance of certain organizations, and regulations for carrying on the trade, which are to receive implicit observance. The former comprise a General Assembly of mineowners, which meets monthly and elects annually two executive organs—an Advisory Council and a "Commission" for fixing the allotments of member firms out of the total output. The General Assembly also fixes the total volume of production, and the compensation or fines for members who fall short of or exceed their allotted quotas, and manages the holding of shares in the Syndicate. One vote is allowed for every 10,000 tons of production.

The mineowners elect the members of the Advisory Council—one member for every 1,000,000 tons of output. This body finally determines the assessment of levies and penalties suggested by the Executive Committee of the Syndicate, fixes the general price policy,

hears appeals from mineowners, and suggests the members of the "Participation Committee." This latter Committee consists of two technical experts, a merchant, and a member of the Executive Committee of the Syndicate, and it allots to the member collieries their shares in the total output determined by the General Assembly of the mineowners.

To guide the organs of the combination in their general policy a series of specific regulations are observed.

First as to the penalties for breaches of agreements by the members, there is a maximum of 1000 marks for all save evasions of the selling agreement, for which the fine is 50 marks per ton. The selling mines are responsible for the supply, weight, and quality of coal, etc., contracted for. The assessment of levies to meet current expenses is made according to a fixed scale of outputs. All accounts are settled monthly. "Normal" prices, fixed by the Advisory Committee, must guide the Syndicate's Executive in fixing the prices at which it buys from the collieries and effects sales. Excess of the selling prices over purchase prices goes to the mine supplying the products. Losses on coal sold cheaply in competitive areas are met by general levies.

No mine can increase its "participation" unless trade conditions allow a general increase, or those of other mines are "bought out." Voluntary reduction of participation is allowed on one month's notice. The cost of extending the interests of the Syndicate by the purchase of virgin coal measures, transport rights, mining shares, etc., are met by general levies.[1]

The fact of vital importance is that the various agreements of the Syndicate are legally recognized and enforceable. They are therefore actually binding and effective, not merely nominal as in many English tem-

[1] This has tended greatly to increase the community of interest between the syndicate firms. It really creates an element of permanent union and holds members together.

porary combinations. This circumstance, the strict definition of rights and obligations, and the provision made for every conceivable emergency contribute to the efficient restriction of competition.

So far, the operation of the Syndicate has been very successful. Its price policy varies in competitive and non-competitive regions. In the former, *e. g.* Holland, Belgium, Baltic and Mediterranean ports, it is mainly determined by the state of foreign competition. In the latter areas, the price policy is determined according to the industrial "conjunctur" of Rhenish-Westphalia. The prices fixed by the Syndicate are, in the main, the official prices through the coalfield, and owing to its predominant influence they do not follow the fluctuations of industrial activity as closely as do coal prices in England. Its power over coke and briquette prices is a valuable asset.

As regards output, the Syndicate's policy is determined according to industrial demands, the state of imports and exports, and the weather. The "participations" of the member firms are allotted according to their productive capacity; their actual production is regulated proportionately, according to the state of trade. The Syndicate aims at that production which is "profitably" rather than what is "technically" possible. The fixing of participations involves the principle of restricting supply according to demand, although most admit that the supply has been adequate so far.

The policy of the Syndicate has been favourable to the development of the industry generally. The "Ruhr District" is second to none in technique, in organization of production and distribution, in economical development of resources, in export trade, etc.

Originally the Syndicate had little connection with questions of labour. Of late years much joint action has been taken in such matters. Large expenditures are made for providing dwellings, washing arrangements for the workmen, as well as for meeting the various

social burdens—insurance, "Knappschaft," contributions, etc. The Syndicate has recently established "Labour Exchanges," through which alone miners are engaged, for the purpose of checking irregularities on the part of the workmen. It is significant to note that wages, conditions of employment, and living are higher in the "Ruhr" than in any other coalfield in Germany.

The conditions which have undoubtedly favoured the development of the Syndicate are various. The natural location of coal measures in Germany is highly favourable. Coal is worked chiefly in three districts, all situated in Prussia, viz. Rhenish-Westphalia, Upper Silesia, and the "Saar" District (South-West Rhine Province). Small deposits are mined in Saxony, Lower Silesia, and the "Aachen District." Coal is not distributed over a large number of important coalfields as in England, where one can compete with another according to the trend of prices. The "Ruhr" is practically independent of competition from the other coalfields of Germany, supplies the bulk of the local demand from industries in Prussia, and holds the greater part of the export trade.

Moreover, the Ruhr coalfield is very much concentrated in area, and the measures are fairly uniform in character. Consequently the colliery firms are not only in close touch with one another, but their conditions of production and distribution are much alike. The determination of a satisfactory basis of agreement is thus greatly facilitated.

The quality of the "Ruhr" coals gives producers in this district a further advantage in the market. They are of greater value for steaming, manufacturing, or gas purposes than those of other districts. These "protective advantages" are increased by the position of Ruhr producers in the matter of transport. Their proximity to the chief centres of consumption, and also to those important means of distribution—the Rhine for Swiss, internal, and coastwise trade, and the Dortmund-Ems

Canal for Baltic and North Sea trade—is a further differential advantage. The interests of the Syndicate in transport companies, its monopolistic control over the wholesale trade, and the favourable rates granted to Ruhr coals by the State railways, further increase the natural advantages it possesses as regards transport facilities.

The firms in the Syndicate are favourably situated as regards both "potential" and "actual" competition. By means of levies upon the members, it has purchased controlling interests in unworked measures. The restriction of production checks the rash development of new properties beyond market needs and to the loss of existing firms.

The existing colliery firms are comparatively few in number. For many years a process of consolidation has been reducing their number, and increasing their size. This is partly the result of the natural tendency towards the centralized production of coal made necessary by modern conditions of the industry; partly the result of the consolidation of interests which has been resorted to by large firms to increase their participation, those of small firms having been "bought out." The extension of Syndicate interests by means of joint levies has led to such a fusion of interests that, even were the Syndicate dissolved, a strongly placed union of mining interests would remain.

Not only are the Ruhr firms few in number, but production is highly concentrated between them. Twenty firms produce close upon 2,000,000 tons apiece, six of the largest produce over 29,000,000 tons of coal between them.[1] The total production in 1911 was 86,846,599 tons; the important firms in the Ruhr number about sixty-five, 93·5 per cent. of the output coming from Syndicate firms.[2] Another very favourable condition for effective combination is thus fulfilled.

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[1] *Die Bergwerke u. Salinen im niederrhenisch Westfälischen Bergbaubezirk*, pp. 4 and 5.

[2] *Ibid.*, and *Diplomatic and Consular Reports for Germany*, 1911, Cd. 5465–166, p. 72.

The admirable organization and impartial administration of the Syndicate have greatly assisted its effective development; the natural faculty of the Bergswerksdirektor for organization seems well adapted to their intricacies. The legal guarantees for strict observance of agreements have created a feeling of general confidence in the working of the Syndicate; mutual suspicion and consequent disruption are prevented. Thus it has been able to steer clear of the reefs upon which so many temporary combinations in England and the United States have been shattered—mistrust between members as to the observance of agreements which lack legal sanction. The Syndicate can exercise its wide authority almost as promptly and vigorously as a single company or an amalgamation of firms.

The existence of preferential clauses in the contracts for exclusive customers enables the Syndicate to utilize for the maintenance of its position the system of "deferred rebates," which has been so powerful a weapon of the Shipping Conferences. Customers are retained and outside firms are boycotted.

Moreover, various circumstances have compelled the Syndicate firms to keep together, if only in sheer self-defence. The existence of Kartells in the various industries consuming coal necessitates combined action on the part of the producers. This is all the more necessary in that recent years have witnessed a remarkable growth in the "coal-consumers' associations" formed to exact favourable conditions in the purchase of coal. The aggressive attitude of the miners' organizations has convinced the colliery firms that it is only the determined and united policy of the Syndicate in maintaining stocks of coke and regulating the terms under which miners are engaged, and so forth, that thwarts the avowed designs of miners for a general stoppage.

The burdens placed upon mining enterprises by legislation, *e. g.* compulsory maintenance of mining schools, insurance schemes, etc., make joint action on

the part of colliery firms a necessary and profitable procedure.

Most of the Ruhr collieries possess "briquette" or "by-product" coking plant; and if it were not for the Syndicate they would meet in disastrous competition at many points. The chemical industries of Germany make a heavy demand for chemical by-products, and the demand for briquettes is also increasing. The combined action of the mines enables them to exploit these demands to the full.

The conviction that the Syndicate is essential for effective resistance to foreign competitors in the world's markets, and for maintaining the German export trade, has proved a valuable asset to the Syndicate. Its remarkable success in this connection has been very conducive to its popularity. Moreover, all the leading producers realize that, whatever the defects of the Syndicate, the present conditions are infinitely preferable to the *débâcle* of a "fighting trade." These convictions, coupled with the general confidence of industrial leaders in Germany in the Kartell system, have produced an atmosphere very favourable to the Syndicate. Its remarkable success, and the extension and consolidation of its interests during the last eighteen years, furnish practical proofs in its favour.

Although the possibility of any scheme of combination in the English industry generally appears as remote as ever, the prospects of the renewal of the Westphalian Syndicate seem to be constantly increasing, in spite of the fact that it is faced with several difficult problems—the participation, for example, due to colliery firms who also produce iron or steel (the Hüttenzechen), the regulation of the output of coking coal, the inclusion in the Syndicate of collieries in the Saar District (South-west Rhineland), the provision of sufficient guarantees to secure the inclusion of the fiscal mines, the general readjustment of participations, etc.

However, the very favourable attitude of the leading

colliery firms and above all of the Government, and the resumption of negotiations between the Syndicate, the non-syndicated mines, and the coal-consumers' associations, are circumstances of the utmost significance.

On all sides, especially in the markets for mining shares, one meets with frank expression of the disasters which must ensue should the Syndicate be broken up. Hence arises the threat of the Government to reconstruct and join the Syndicate, possessing itself, at the same time, of a right of veto in the question of prices. The expenses of the fiscal mines are notoriously high, so that their lowest price limit must always leave the Syndicate firms a fair margin.

The strategic position of the Syndicate is very strong, both as regards its practical and moral powers, and it seems highly probable that in the long run these must tell in favour of its renewal.

G. R. Carter.

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